

THE VALUES OF FOODS.

CALIFORNIA STATE BOARD OF HEALTH

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REGULAR MEETINGS

The meetings of the California State Board of Health are held regularly the first Saturday of each month, but the quarterly meetings required by law to be held at the Capitol of the State are ordinarily designated as January, April, July, and October.

By courtesy of the University of California the Food and Drug Laboratory and the Hygienic Laboratory are located in University buildings at Berkeley, California.

Address all general communications to the

SECRETARY, Sacramento, California.

OCTOBER BULLETIN.

COMMENTS.

"Guaranteed" Foods and Drugs.—Very many people who read the words, "guaranteed under the (U. S.) Food and Drugs Act, June 30, 1906. Serial No. —," believe this means that the product which bears the inscription has been examined and is fully endorsed by the United States Government—endorsed not only as to its chemical composition, but also as to the food values or medicinal uses claimed for it. The United States food and drug laws have no control over the truthfulness of any statements that may be printed on the labels of foods and drugs unless the proportions or qualities of ingredients are misrepresented or include prohibited substances. The serial number only means that the company using it has filed a statement in Washington to the effect that all goods bearing that number will comply with the law. As a practical detail in administering the food and drug laws, the serial number is important in identifying products found to be in violation of the law just as the license number on an automobile aids the authorities in identifying the violator of automobile laws, and tends to make the possessor of the number more cautious about subjecting himself to the possibility of arrest. Having been informed of the true nature and composition of a food or drug, the law considers it to be the duty of the citizen to decide whether he wants to buy it or not. It is, therefore, incumbent upon each citizen to know the general principles of digestion and food selection, and the limitations of therapeutic values of the common drugs if he desires to be fully protected.

Medical Science and a Stomach "Complaint."—Many diseases have passed from the realm of guesswork diagnoses and uncertain modes of treatment to that of scientific methods, in both diagnosis and treatment. The public, too, has become familiar with the usual procedure and equipment for ordinary diagnosis work. Thus, a person expects to put out his tongue, to describe his "symptoms," to have a thermometer placed in his mouth while the doctor "feels" his pulse, etc. Most persons are familiar with the appearance and uses of a stethoscope, a head mirror, the "X ray." If a doctor prepares to probe a wound or open an abscess they know how and why he sterilizes his instruments and judge him by his equipment and his skill in using it. There is nothing mysterious in all this, even though they do not know many of the details.

But there still remain many diseases about which the public does not know the importance of scientific methods. To this group belong most of those requiring methods for examination of internal organs of the body. The importance of scientific diagnosis of diseases of the stomach and intestinal tract are particularly slow to be appreciated by the people, and even by the doctors. A physician who solemnly sits down before a patient with a "stomach complaint" and tries to decide what kind of a prescription to write by counting the pulse and noting the

color of eyes, knows about as much concerning the real nature of his patient's disease, or functional disorder, as a customs-house inspector knows about the contents of a trunk by applying the same method to its owner. The doctor knows less, in fact, for the eyes and pulse of the trunk owner will tell a good deal to the inspector. But the inspector does not determine the amount and character of dutiable materials by any such uncertain method. He goes to the bottom of the trunk. Just so the trained doctor thoroughly investigates the disorder from which his patient suffers.

Every observant mother has learned the importance of noting the character of her baby's vomitus, the color of its stools, the evidence of inflation of its stomach, etc. These are but items in a careful examination of the cause of the baby's illness or discomfort. The modern physician is equipped with instruments and laboratory examination methods for thoroughly exploring the alimentary canal from the mouth to the stomach and through the length of the intestines. Where physical examination and the electric light or "X ray" can not be used, the test-breakfast and stomach pump may give the necessary information, and where this procedure is not in order, the capsule methods of introducing test materials and obtaining secretion-reactions may be of value. And so the good physician, like the good machinist, does not give his opinion until he has made a thorough examination. This may require time and the employment possibly of many diagnostic measures, but it is the only way in which accurate knowledge can be obtained.

In time the public will come to realize that the average citizen can understand the working principles of medical examination and treatment, just as well as he understands the general principles on which automobiles and watches and flying machines are built. There will always be those who believe that the man who gazes at the stars in an owl-like fashion, or the woman who gazes at a pack of playing cards in a dimly lighted room, can best manage their business for them, and those who pursue essentially similar methods of medical practice will always have a following; but the mass of the people no longer believe that the child-like belief of savages in charms and seers applies to medicine. The excellent series of articles collected from former issues of the bulletin and reprinted here give in non-technical language much information about foods, which has been found interesting to the public, and which constitutes the general basis for dietaries.

The Influence of the "Disappearing Kitchen."—One of the problems of modern city growth is the condensation of the large, comfortable, family, country homes of our forefathers into homes 10 feet by 12 feet by 50 feet piled eight, ten or more high and flanked on either side by similarly condensed homes. These houses can have light only from windows in the front and back sides, and occasionally the diffused light from an air shaft. The only front yard is the fire escape, the only back yard is a narrow porch, and the limited air space made usable by an aerial clothes line. Under these conditions it is to be expected that disappearing-beds, gas-mantels, and similar devices for economizing space will be popular. To meet this demand has come what might be termed the disappearing kitchen. Just as the spacious, well ventilated old bedroom, with its wide-chimneyed fireplace, has been superseded by the small, illy-ventilated room which serves in the added capacity of

sitting-room by day, so the great, open, cheerful kitchens of old are being superseded by the twentieth century kitchenette. Limited facilities for cooking and serving meals mean limited range of foods which may be considered for the table. Through invention and clever application of the scientific principles of food preservation, this limit has been gradually extended until the tin-can dietary may be made to cover nearly all the ordinary demands for proper food, but the cook must know her trade or the family will severely suffer. It is probable that the "disappearing" house plays a large part in the present-day prevalence of many diseases and functional disorders, especially of the alimentary canal.

The Man Behind the Food Law.—While many men play some part in the enforcement of the pure food laws, it is practically certain, wherever these laws are being operated actively and to the satisfaction of both consumer and producer, that one will find a good chemist behind the law. Food and drug analysis ranks among the most difficult and technical of the divisions of chemistry. Under the provisions of the law triplicate samples are purchased as a basis for food violation cases. One sample is always left with the person from whom purchased and one sample is sent to the Secretary of the State Board to be held as evidence. The third sample goes to the State Board's laboratory for analysis. In many instances the first sample is analyzed by private chemists for the person accused.

Approximately five thousand samples have been thus collected and analyzed. Of this number, 1709 have been found in violation of the laws of California. It is a tribute to the accuracy of work done by Professor M. E. Jaffa, director of the Food and Drug Laboratory, and his competent staff, that in none of these cases have the chemical findings been questioned in court.

GENERAL PRINCIPLES UNDERLYING THE USE OF FOODS.

M. E. JAFFA.

Perhaps there is nothing more characteristic of the day and the hour in which we live than the widespread interest in the subject of food. People have always been interested in satisfying hunger, and tickling the palate, but the modern intelligent men and women are beginning to put earnest thought into the selection of the food materials upon which depends their *life*, health, and working capacity. But thought alone does not properly solve many problems, unless there be first acquired some facts, or knowledge, some good foundation principles upon which to form a judgment or to base a decision.

The scientific principles which underlie the proper selection of foods are simple and easily understood. Chemical analysis has shown us that all foods, no matter how simple or how complex they may appear, contain only four classes of materials. Each class has many subdivisions containing an infinite variety of chemical compounds. But nothing has been found that can not be classified under these four heads. One of these is water, and need not be discussed here. Another is mineral matter, which is found in sufficient quantities in almost all articles of food to insure a plentiful supply to the adult system, through any ordinary diet. For infants, the amount and kind found in milk is suited

to all their needs. That leaves us only two main classes of nutrients to understand and to deal with; the nitrogenous group and the non-nitrogenous.

The question is naturally asked, "Of what use is this classification? In what way does it help the ordinary person?" The answer is at once plain when we consider that these two classes of nutrients have entirely distinct and separate offices to perform in the body. The protein or nitrogenous group builds tissues; the bones, muscles, nerves, internal organs, etc. It supplies material both for the building of new tissues, as in growth, and for the repair of the old. The non-nitrogenous group furnishes heat to keep the body warm and energy or power with which to perform our work. This material may be stored up in the body for future use in the form of fat, but can never be used to build real or deep tissues. Fat in the body is like coal in the basement, ready to be converted into heat and energy. Our need of it after we have accumulated enough fat to round out our frames is in direct proportion to the weather and to the amount of energy we expend in both voluntary and involuntary functions. The man at hard, outdoor work in cold weather requires much more of this class of food than the man writing at a desk in a warm office.

It is important that we should not lean too much to one side or the other in choosing our foods. The seriousness of such a mistake depends absolutely on the circumstances. For instance, to deprive an infant of protein would probably be far more serious than to give it too much; while to overdo the protein with an adult might so injure the organs of elimination as to bring on serious trouble, especially if animal protein were used entirely. As a general rule, an excess of carbohydrates causes less trouble in the system than an excess of protein. This however, would not be a safe rule to follow to an *extreme degree*. Fortunately for us, most foods contain some nutrients from each main class. When we classify foods we place them according to the largest amount or importance of some ingredient that they contain, but that does not mean that they do not contain any other. The following table illustrates this point. Some of our common foods are placed under the class to which they belong, while in parentheses are indicated what important nutrients of the other class they contain. Very small amounts are not so indicated:

TABLE I. Showing classification of foods.

I. Nitrogenous or protein group.	II. Non-nitrogenous group.		
	A. Carbohydrates.		B. Fats.
	1. Starches.	2. Sugar.	
Meat (fat) Milk (fat and sugar). Eggs (fat). Cheese (fat). Fish. Oysters. Nuts (oil). Beans (starch). Peas (starch). Gluten flour (starch).	Flours (protein). Cereals (protein). Bread (protein). Macaroni (protein). Rice (protein). Potatoes. Green vegetables. Fruits (fresh and dried).	Cane sugar. Beet sugar. Milk sugar. Fruit sugar. Syrups. Honey. Sweet fruits. Fresh. Dried.	Meat fat. Fish oil. Butter. Cream. Vegetable oil. (Olive, etc.)

It is important also that we should not ignore the subdivisions. While the sugars, starches, and fats belong in one large class, and apparently perform the same office, they vary greatly in other ways. Starch must first be converted into sugar, in the digestive tract, before it is absorbed and used. Therefore, it would be much more difficult for the body to obtain all of its carbohydrate from starchy food, rather than from starch and sugar both. Again, fat is worth two and one fourth times as much as either starch or sugar for producing heat and energy. The Laplanders and Esquimaux realize this when they eat so much tallow and blubber during the long and severe Arctic winters.

There is another important reason why fat should never be overlooked in the diet of any person. It has an entirely different process of digestion from the other sub-classes of the non-nitrogenous group and separate channels of absorption. A failure to use fat, therefore, tends to overwork the organs engaged in digesting starch and sugar, and throws out of commission that part of the digestive apparatus especially designed for the handling of fat. The disuse of any organ tends to weaken it.

Man has, of course, in common with the animals, a power of instinctive selection of foods; but this power decreases in exact proportion to the degree in which he departs from natural and simple conditions of life. In the complexity of our present system of living, it can be relied upon to a very limited extent only. Especially is this true because very few people have the opportunity of being guided to any extent by an instinctive choice. At best, it is usually a selection from the foods provided by a third person—and *not* a selection from all foods available. It is necessary to keep the balance between the old method that is being given up and the new that is just being learned. Knowledge must gradually take the place of instinct, but it must be real knowledge and not mere notion, or misapplied fact.

A *scientific dietary* is simply an *accurate* use of the plain, ordinary food materials of daily consumption. It is the logical continuation of that first great successful step in this direction, that of modified milk for babies. Just as the ingredients of milk—protein, fat and sugar—when fed in the proportions found in cow's milk (and intended for the calf) caused the illness and death of thousands of infants, while the same ingredients, fed in the proportions found in mother's milk, agree perfectly; so the proper proportions of protein—carbohydrate and fat—form a perfect diet for the older person, while the continued use of the wrong proportions bring about disaster.

The *exact proportion* of the different food classes that should be used in the ordinary diet has not yet been absolutely determined, for there is no other such perfect model to follow as Nature has given us in mother's milk, the perfect food for infants, but it has been established *approximately*. Many experiments have been performed, and much investigation made, all tending toward establishing rules for the proportion and amounts of food materials needed by different people under different circumstances, and the results have been published by the Government. A list of popular publications bearing on this subject will be found on page 92. Very accurate data have been obtained for army rations and have proven practical in recent tests during the Russo-Japanese war.

The food problem is not a problem to all people or at all times. Thou-

sands of men and women who are normal in body and in occupation, eating from the ordinary table, well provided with Nature's well assorted foods and never giving the subject a thought, are as well and as properly nourished as if hours had been spent on their dietaries. But unfortunately they are not in the majority. Cases of malnutrition are only too frequent in people of all ages and from all classes of society. During the past few years physicians have come to realize that many more diseases are due to this cause than was formerly supposed, because the various diseases were named, frequently, from some symptom or manifestation that appeared toward the last, rather than from the first, underlying cause—malnutrition. Sometimes this condition is due to an incapacity on the part of the system to properly utilize the nourishment in the form in which it is given, but more often it is due to an insufficient or incorrect supply. Overnutrition is sometimes as bad as undernutrition, and both are malnutrition.

The first step in the process of adjusting these difficulties, or preventing possible future ones, is to keep clearly in mind the two classes of foods and their use in the body, so that we may provide them in varying proportions, according to the age and condition of the person to be considered. A first general rule that is safe for all people to follow is to eat from both classes and from each sub-class. Each has its place in the human economy and each one probably has its special advantage. Many people give up a group of foods because one or two of the group do not agree. For instance, a very thin person who needs to be fattened will say, "I can not eat fat," because both meat fat and butter are either distasteful or cause distress. They have not tried cream or oil or nut butter; neither do they try the fat in different combinations. It is better to persist until the right article or combination is found than to eliminate an important group from the dietary.

More illustrations covering this point will be found in the following articles which continue the present subject under different heads, and consider the practical application of first principles to different conditions of life.

NUTRITIVE VALUE OF FOODS.

M. E. JAFFA.

The term "nutritive value" of a food is not always used in a proper or exact sense. The term implies the proportion of nourishing material to the amount of water that the food contains. On this basis, some people have come to use the term carelessly, as synonymous with dry matter. This is often misleading, especially at first glance. Two foods may have the same amount of water and the same amount of dry matter, and yet one may contain more nourishment in its dry matter than the other. For instance, bread and full cream cheese have been said to have the same nutritive value because they have about the same proportion of dry matter. But the dry material of cheese contains 33 per cent of fat, while bread has only about $1\frac{1}{2}$ per cent. As fat is worth $2\frac{1}{4}$ times as much as starch (the other ingredient of bread) for heat and energy, the cheese is of far greater nutritive value.

Again, we must remember that the nutritive value to the individual depends upon the particular nutrient that he is in need of. In looking over a table of foods in search of those that may be valuable for a certain purpose, we must always bear in mind that the fuel value of

starch and of protein are the same, although it is undesirable that we should get our fuel from protein. Real value depends upon the use we make of material, and therefore the nutritive value of a food varies with the need of the system for it.

The word value usually has an associating thought of money, and there is this element to be considered also. In buying food *by the pound* we pay for water that is in it, as well as for the dry matter. Therefore, the less water it contains, other things being equal, the cheaper it is, even though the price per pound be the same. This difference in food must not be lost sight of in looking over tables or lists of nutritive values.

In the following graphic presentation of food values we have attempted to show at a glance the proportion of water, protein, carbohydrates, and fat that some of our common foods contain.

The caloric value or fuel value is not represented. For those who would like such information Table I is inserted. The caloric is the unit of heat.

Table Showing Cost of Foods as Regulated by Protein and Fuel Values.

Kind of food material.	Price per pound.	Protein.	Fuel value per pound.	Cost one pound protein.	Cost 1000 calories.
	<i>Cents.</i>	<i>Per cent.</i>	<i>Calories.</i>	<i>Dollars.</i>	<i>Cents.</i>
Meat—					
Round	12.5	19.2	745	\$0.60	18.0
Sirloin	18.00	18.0	985	1.00	18.0
Milk 10c a quart	5.00	3.5	310	1.40	15.0
Milk 15c a quart, certified	7.50	3.5	310	2.15	22.0
Skimmed milk 2½c a quart	1.25	3.5	255	0.36	5.0
Eggs—40c a dozen	25.00	13.0	735	2.00	36.0
Cheese, Swiss	35.00	27.5	2010	1.30	17.5
Cheese, Cheddar, full cream	20.00	26.0	2145	0.80	10.0
Cheese, Cottage	15.00	20.0	310	0.75	45.0
Beans	5.00	22.5	1605	0.20	3.0
Wheat flour	3.50	10.0	1600	0.30	2.5
Wheat bread	5.00	8.0	1205	0.60	4.0
Corn meal	4.00	10.0	1700	0.40	2.5
Rice	8.00	6.0	1630	1.30	5.0
Potatoes	2.00	1.5	310	1.30	6.0
Apples	4.00	0.5	220	8.00	8.0
Bananas	7.00	1.5	460	4.60	14.0
Peanuts	10.00	32.0	2610	0.32	3.9
Walnuts	20.00	15.0	3075	1.30	6.5

DIGESTIBILITY OF FOODS.

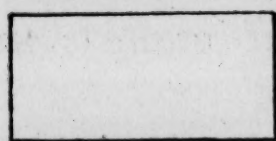
M. E. JAFFA.

The chemical analysis of foods gives us the varying amounts of the different kinds of nourishing materials they contain. But these materials differ in regard to their digestibility, and differ in two distinct ways. One is, in regard to the proportion of nutrients that the average healthy person is able to extract or appropriate from them, without regard to any digestive peculiarity. We do not assimilate all of the nourishment that any food contains, but we get far less from some than from others. The amount that is *usually* assimilated is referred to as the “*available*” material. We sometimes use the words “digestion coefficient” to signify the *proportion* of available material that a food contains.

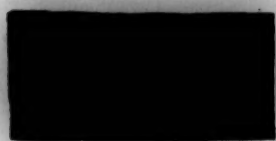
This kind of digestibility has no relation to the second kind, which is popularly used to denote foods that are difficult for the stomach to handle or which may cause distress or disturbances of different kinds. We should not confuse a food that requires a *long time to digest* with

COMPOSITION OF FOODS GRAPHICALLY SHOWN.

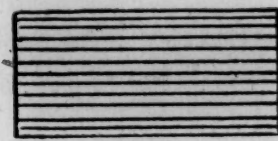
LEGEND.



Water.



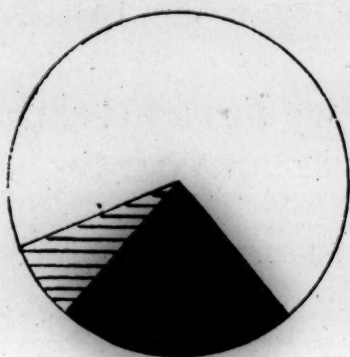
Protein.



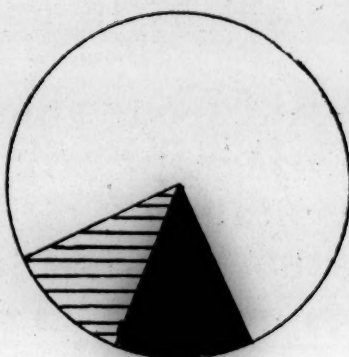
Fat.



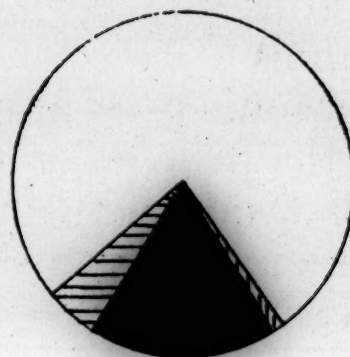
Carbohydrates.



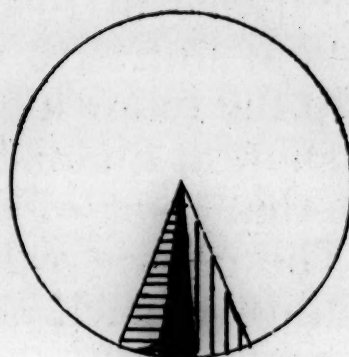
Lean Beef.



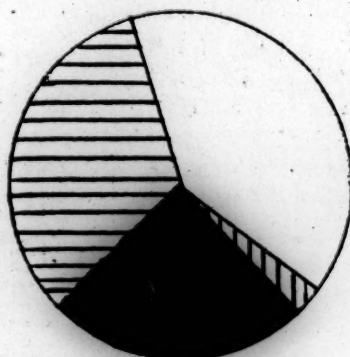
Eggs.



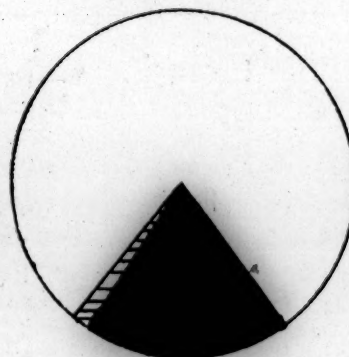
Fish.



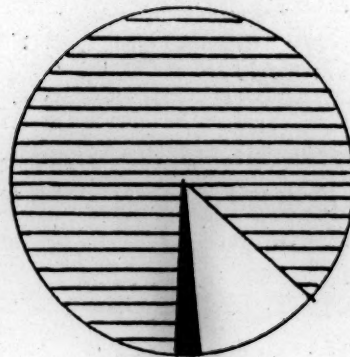
Milk.



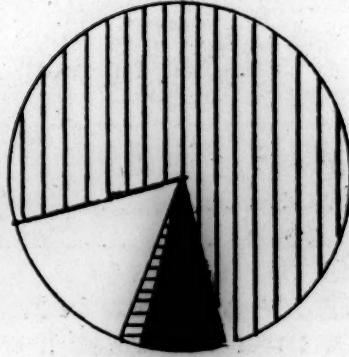
Cheese. Full Cream.



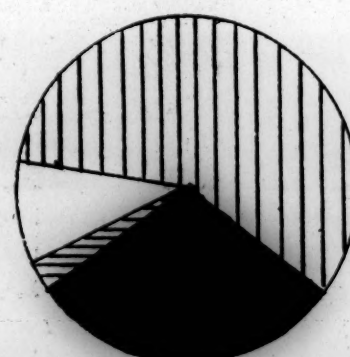
Cheese. Cottage.



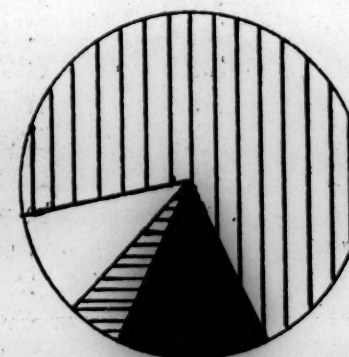
Butter.



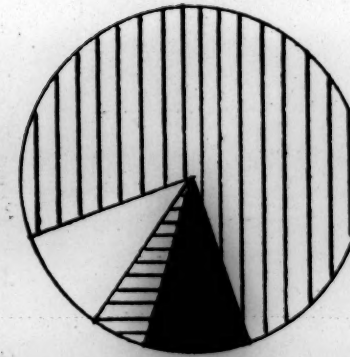
Flour. White.



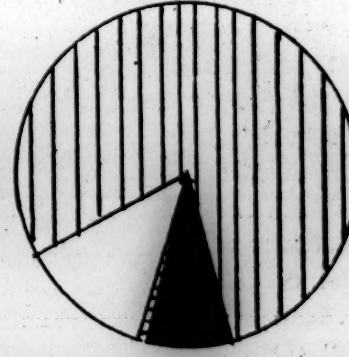
Flour. Gluten.



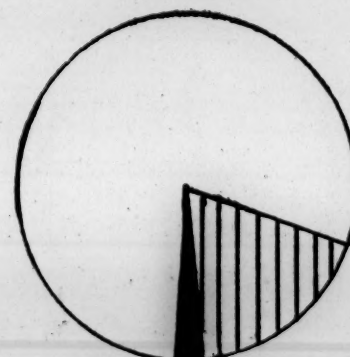
Oatmeal.



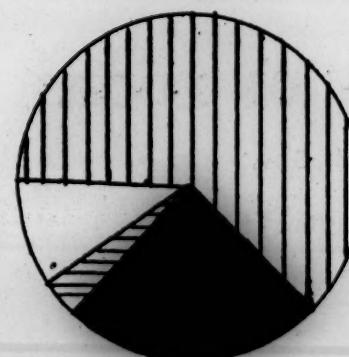
Cornmeal.



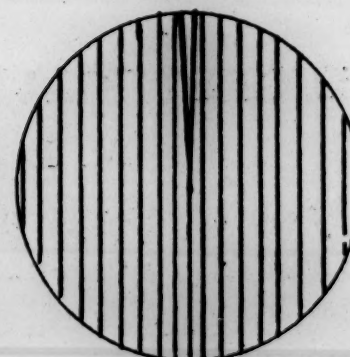
Rice.



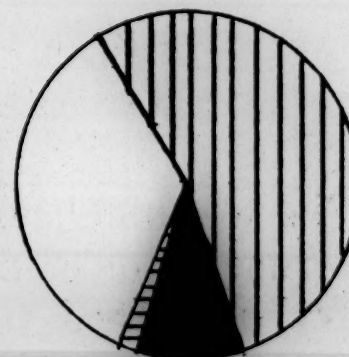
Potatoes.



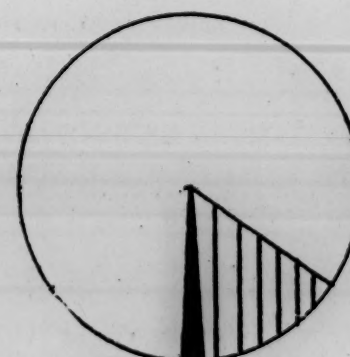
Beans. Dried.



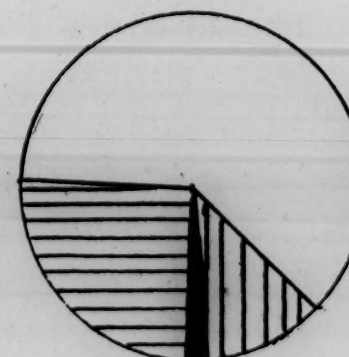
Sugar.



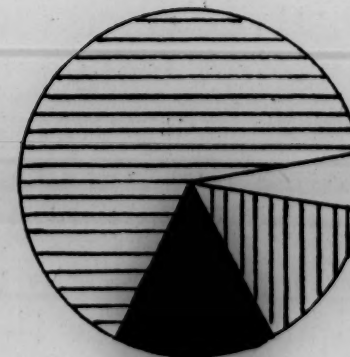
Bread. White.



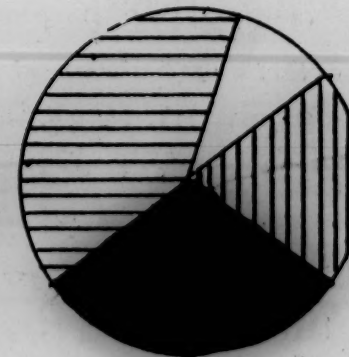
Fruit. Fresh.



Olives.



Walnuts.



Peanuts.

one that may be impossible of digestion. That part of the food which is considered in a table of values to be digestible or available may be digested either slowly or quickly, with ease or with difficulty, and with comfort or with distress. The readiness or ease with which foods are handled depends not only upon the food itself, but upon the method of cooking and the idiosyncrasies of the person eating it. Some foods are by their nature more difficult to reduce to the form in which the body can make use of them than are other foods, but it is often due to the way in which they are prepared or to the foods with which they may be combined. For example, recent investigations show that two different kinds of fat can not be well digested at the same time; therefore, fat meat might be handled well at one meal when eaten with only bread, vegetables, and fruit, while it might not be digested the next time if used in connection with a mayonnaise salad, thickly buttered bread, and cream cake. As a rule, the fewer articles of food eaten at a meal, the more rapid and easy is their digestion. Another case in point is where a food that requires the action of the gastric juices is closely overlaid and surrounded by another food that is ready and perhaps waiting for intestinal digestion. Much also depends upon the condition of the person at the time of eating. A digestion already overtaxed may rebel against the handling of a food that would cause no difficulty at another time. Not only does the condition of the digestive organs play an important part, but the condition of the man himself must be equally considered. A tired brain and body are not apt to allow of full vigor of any function of the body, and the digestion suffers if this fact is not properly considered in times of unusual fatigue.

The question of digestibility is a long and intricate one. There are so many elements that enter into it that it would be impossible to consider them all here. It involves many different conditions even in the same food, and many varying conditions in the same person, to say nothing of the various idiosyncrasies of different people. The many morbid or pathological conditions that interfere with digestion or require special diets are always to be considered by a physician.

The psychological element plays a large part at times. The craving for a food and the enjoyment with which it is eaten certainly help in its digestion very often. The first flow of gastric juice is due to nerve stimulation and because it is increased or "started" by the odor or taste of food, etc., is called "appetite juice." The second is dependent upon the chemical stimulation by the first. This explains the fact of dyspeptics being able to digest a food better if it has an agreeable taste, or when accompanied by a condiment. This must not be confused with the other very different one of allowing appetite and desire to rule continually in the selection of food without regard to the laws of hygiene or moderation. Another psychological element, which is perhaps the converse of the first one, is the very depressing effect that constant fear and worry over the daily food often have upon the digestion. An over-consciousness concerning any organ is not beneficial to its condition. To be constantly afraid of what we eat, constantly in doubt, and always watching for results, is not conducive to general vigor and normal functions. When special needs must be considered, it is far better for any other than the person himself to be the one to consider them. If there is no one else to do so, then a careful decision should be made, lists of foods written out and the subject dropped from the mind as a problem, and the selected article eaten in confidence and security of mind.

THE FAMILY TABLE.

M. E. JAFFA.

The home table is the "Mecca" toward which the traveler, the homeless, the restaurant frequenter, turns with longing eyes. But even this best of all good places at which to eat has some disadvantages. There is still something to be said in favor of the wider choice afforded by a meal that is served *à la carte*. The most attractive and best cooked "home dinner" is not always adapted to the needs of all the people who gather about the board.

In the first place, the needs of the various members of the family are apt to differ very radically, and one person is often sacrificed to the demands or tastes of the others. It takes a great deal of time and thought to plan for the different members of an ordinary household. "Baby" usually fares well so long as the baby routine requires special dishes and different hours. But when she graduates into family routine the dishes that she partakes in common with the rest are not apt to be prepared according to her needs. They are seasoned and spiced and served with sauces to suit the adult taste, and there is more variety than is good for her and an absence of "truly baby dishes." Her heaviest meal is apt to be at night, because the men folks must have their dinner at that time, even though her sleep be disturbed in consequence. Mother, too, is often too weary to digest a heavy meal in the evening, especially after preparing and serving it. She eats hurriedly in order to "catch up," because the first person served will soon be ready for a second helping, and because she does not wish to delay the coming of the dessert. She does not eat enough, and does not digest it perfectly because of the hurry and the weariness. How much better it would be if she and baby could have a nourishing and substantial meal at noon when the dining-room was quiet and there is plenty of time to eat and when neither one was exhausted. It need not be an expensive meal or one difficult to prepare, for extra work must be considered. How much better condition mother would be in to consider the needs of the other members of the family when dinner time comes.

What are their needs? Father sits in the office all day and writes and thinks and directs and plans. He is tired, but hungry. His lunch at the restaurant has been trying to his digestion. Perhaps the bread was underbaked and the stew greasy. He needs food that is tempting in appearance, taste, and odor—something fairly easily digested. His stomach shares in the general weariness of the body, but it will do its work properly if given something that stimulates the stomach muscles and the gastric glands, which are sympathetic to the sense of taste, odor, etc. The meat dish is apt to be more attractive in this way than the other things, and he eats heartily of it, even though he has had meat for lunch. Johnnie has been at school during the early part of the day, studying part of the time, and having a jolly time with the boys at recess. He has been out of doors three hours playing baseball and climbing fences and walking home. He is as hungry as a bear, and could be almost trusted to digest leather. Everything looks good and tastes good to Johnnie. The food requires no extra spices or flavors, no fancy touches to attract him. In fact, spices and peppers are distinctly bad for Johnnie. They are apt to stimulate into consciousness nerves

that should be sound asleep with the rest of him in a couple of hours. But Johnny likes the meat as well as Father does, although Mother serves to him less in spite of his hints. She forgets that he ate a hasty lunch of rice and a banana, that he does not like milk, and that eggs have been too expensive for breakfast. She was brought up to believe that children ought not to have too much meat, but she has no definite idea of what constitutes "too much." She shakes her head at Johnnie when she sees him putting lumps of butter on his bread; she does not approve of excess. But Johnnie has been burning up fat during his baseball game; he needs to replenish the supply, and Johnnie is growing and needs growing material more than Father does. He can not get it all from one meal either, and it would often be beneficial to both parties if part of Father's serving went to Johnnie, and Johnnie's to Father, at every meal. More than that, grown people often allow themselves to partake of very "*indigestible*" dishes, while they conscientiously deny them to the children. It is frequently the case, however, that the children, who have no other strain upon their forces, could digest these dishes far more easily than can their parents; not that they are to be recommended for the use of children for that reason. And how about Aunt Jane? The doctor has forbidden her to eat meat, so she comes to the table and eats the other things. The ordinary dinner, *minus* the meat, is not a proper meal for her. *She* should have the glass of milk that Miss Elizabeth, aged 8, is drinking with her dinner, simply because she has not yet given up her baby habit of expecting and asking for milk with every meal. Elizabeth is average size, plump, and thriving. She is not growing rapidly, is not overactive, but has a large appetite. She eats everything that every one else eats, and probably does not require the milk. Aunt Jane needs it, but refuses it, not because she dislikes it or because it disagrees, but because she does not know that she needs it as a *food*, and prefers *tea as a drink*. Elizabeth has milk at noon, too, which makes a good meal with almost any other thing that Mother provides, although Mother and Johnnie have *only* had the "other thing," which is probably *not* enough for them. And thus it goes.

It is very important that the mother should keep in her mind these different needs and problems of the various members of the household. They can not *all* be considered always at each meal, but they should each have their turn at being carefully and thoroughly thought over and planned for. She must always remember that she can not properly consider the needs of any person at any meal without keeping in her mind what their other meals are. The lunch of a man who eats eggs for his breakfast is a different problem from the lunch for the man who has toast and coffee only.

The family dinner need not be a very intricate or complicated affair if the special needs of *some* members of the family are considered at other meals. A change in Johnnie's breakfast might make his dinner better suited to him; and a change in Aunt Jane's lunch might have a similar result for her. Thus, a very little change at dinner might be all that is necessary to round out any needed reforms. Some other dish than the meat could be made equally tempting to Father, and the spices or condiments that he requires for digestive stimulants could be served separately in sauces, etc., so that the tastes of the younger members of the family would not be cultivated in this direction. Macaroni in

place of potato would help out for Aunt Jane and Johnnie, and would not do an injustice to anybody; so would bean, pea, or lentil soup instead of beef soup help out in this way. Cheese, nuts and cup custards as well as milk are easy extras to have on hand for the non-meat eaters and rapid-growers.

In planning a dinner for four or five people, we should learn to have a mental picture before us of (1) The classes of foods and what they do for us; (2) The needs of the people in general and in particular; (3) What their other meals have been or will be. Dinner is not necessarily the most important meal of the day. But, as all the members of the household do not, as a rule, eat all three meals at home, the evening dinner becomes the important factor in the daily dietary for many people and the one time when home is supposed to perform its primal function of ministering to the individual needs of the individual homedweller.

FOOD FOR GROWING CHILDREN.

M. E. JAFFA.

There are two periods in the life of a child when the question of food, from the standpoint of pure *nourishment*, aside from its digestibility, is most important. These are the periods of rapid growth. We have come to know a great deal about the food for the first period, that of babyhood, especially since the chemical analysis of mothers' milk has furnished us with a perfect model upon which to base our selection of substitutes in artificial feeding of infants and for the year or two following infancy.

But the second period of rapid growth that comes early in the "teens" is not yet so generally understood. During these years of adolescence, when Nature is making every effort to develop and round out the perfect individual, she needs all the help we can give her. She can not build if we do not supply her with material, but she can, and often does, build one part at the expense of another. It is a common thing to hear a mother say, with reference to a child, that he "outgrew his strength." Translated, that expression means that the child did not get, or was not able to use, sufficient food material to supply all the needs of the entire organism. When we stop to consider that practically every boy of twelve or fourteen exercises more than the average father and mother, is using his brain for study, and is growing rapidly besides, we see at a glance how much more food material he requires proportionately, and the question is, how to supply it. What kind does he need? *All kinds.* He needs protein "to grow on," to enlarge every tissue of his body as he builds up the frame of a man, and he needs a larger proportion of it than is required by the average adult; and the other kind, the non-nitrogenous, to furnish heat and energy for his exercise and sports, and to round out his body with fat.

While he needs a large quantity of protein, he should not get it all from meat. Remember the meat substitutes and make good use of them at his "non-meat" meals. Give him milk and eggs and nuts and cheese—not all at one meal, however,—and macaroni and beans, lentils and peas, and he will not crave meat so inordinately as some growing boys do.

He needs a large quantity of carbohydrate—but do not expect him to

get it *all* from starchy food. It is very bulky and requires one more process of digestion than sugar does. Do not be afraid of sugar. Remember that mothers' milk contains five per cent sugar and is a perfect food for a rapidly growing body. Give the girls and boys candy for dessert, nut candy especially, or dates and raisins, and use sugar in the cooking. It furnishes nourishment in a concentrated form. And *fat*—do not ignore it. Fat is worth two and one fourth times as much as starch or sugar for producing heat and energy. If meat fat does not agree, try cream or oil. See to it that he has a fair chance at each group of foods.

His instincts will lead him to choose the all-round diet that he needs, provided he has an opportunity of selection, but it will not lead him to the grocery store in search of some needed material. To limit his choice to a few articles is to tempt him to overuse the one that appeals to him the most. To regulate his diet entirely to the taste or fads of the "grown-ups" is to hamper him most cruelly. Grown people have the right to experiment as they will with their own food and carry out any pet theories on vegetarianism, raw food, etc. They may be on the right road, or they may find their error before great harm is done. But to make a mistake in food during the period of rapid growth and effort at maturing is to make a mistake that can not easily be remedied. It is often a case of "now or never," and the work that is not done in this second formative period of life may not be done at all. Weak spots in the building will always remain weak spots, and we should not run any risks at this time.

Many of the nervous symptoms usually observed during the period of adolescence are not necessary or normal. The nerves suffer from insufficient and improper nourishment, as well as from other wrong and unhygienic conditions during the early "teens."

If the child seems unable to handle the amount or kind of food that his age and growth seem to require, he should be relieved of all strain, all unnecessary demands on the reservoir of strength and energy, so that he may have a sufficient quantity to devote to the important process of digestion, assimilation and growth. No education obtained under such circumstances is worth the loss or interference with the normal development of these years.

In providing meals for such cases some concentrated food should always be used in connection with the more bulky varieties. Fruits and vegetables have a hygienic as well as a nutritive value, and must never be ignored. Organic phosphates are very essential in growth, and care should be exercised in the cooking of vegetables in order that this valuable material reaches the table instead of being thrown out in the excess of water often used in the boiling process. Baked or steamed vegetables are better for this reason. Graham bread and bran "coffee" furnish these valuable phosphates also.

If parents were as thoughtful about the food of their children during the adolescent period as they are during the period of babyhood, we would not have so many inefficient men and women.

FEEDING CONVALESCENTS.

M. E. JAFFA.

At no period of life, perhaps, is the subject of food more important than during the period of a child's convalescence from disease. During the actual course of the disease there is usually an attending physician, who, if he is properly discharging his duty, prescribes the daily diet as carefully as he does the medicine or other hygienic care. But as soon as the disease is fairly over, and sometimes even before this stage is reached, the physician's visits cease, and the little patient is left to the wisdom or ignorance of the mother, modified by the notions or fads of an "advisory board" of neighbors and friends.

For this reason the child often fails to regain his normal vigor, and his future ailments or lacks are attributed to the disease itself, instead of being assigned to their real cause, a failure at normal recuperation. These periods of convalescence are very important ones in the child's life, and are sure to bring results for good or evil in his future development.

They are often, indeed, the mother's golden opportunity to do for the child's general development and upbuilding what she has not been able to accomplish before. To force nutrition during ordinary periods in a child's life is often a difficult matter. Habit is strong in the system, and whatever little sluggishness or impediment has prevented the original formation of a robust constitution, continues to interfere with efforts for improvement.

But nature is quick and persistent in her efforts at repair work, and will take assistance at such times if at no other. While she is in the mood for building, she will build a little more if she is kept well supplied with material. Many children have come out of the sick room in better condition than they went into it, a condition due entirely to the fact that good nursing and feeding have allowed nature to do more than she had been able to do at any other time.

The other important element in the case must not be ignored, the quiet, regular life of the well-cared-for convalescent, which allows nature to devote her best energies to the work in hand, instead of having it diverted from its first need by maintaining the child through long hours of exciting and sometimes exhausting play. Many undesirable tendencies in the constitution are entirely overcome at these times for the same reason perhaps, that while nature is engaged in fighting the acute disease, the same latent force which has been aroused for the emergency continues to act on the sub-acute or chronic trouble.

The feeding of any convalescent is important, but it is so in far greater degree with a *child*, when, during the growing period, instead of building tissue, the system has been busy tearing down this valuable material and converting it into fuel to be consumed in the fever. The fat is the first tissue to be broken down, in cases of loss of flesh, but the muscle is next drawn upon, and, even during convalescence, when the patient begins to exercise, this dangerous process may continue if the food is not sufficient to supply all the requirements of the body.

The kind of food that is of first importance, therefore, is the deep tissue building class, the proteids, such as meat, fish, eggs, milk, etc. Those that yield heat and energy and build fatty tissue can afford to wait for second place until the patient has gained a good appetite and

can handle a sufficient quantity of food. Where previous kidney complications require continued care in the selection of foods, the diet should be prescribed by a physician.

All food should be of a kind to be easily digested, for while we wish to offer the system a full supply, we do not want to strain its capacity by difficult digestive processes. For instance, the meats should consist of broiled chops or steaks, or roasts. All fried foods, mixtures "warmed overs," and made dishes should be avoided. The "between meals" should consist of food or drink that is especially easy to handle. For two reasons the first food should be given as soon as the little patient is awake. The sub-normal temperature in the morning shows lowered vitality at that time and suggests the need of nourishment—and also, if we are to have extra meals, we should have a long day for them, so as to insure proper intervals. A hot drink of malted milk or prune juice and water, or cambric tea (milk and water, or cream and water, with sugar) will prove gratifying, give nourishment, not interfere with the breakfast appetite, and will probably keep the child from showing nerves or temper during the process of the toilet or the wait for breakfast. If this drink is given at 6:30 a. m. the breakfast may be prepared for 8 or 8:30, about as follows: Mush, soft boiled egg (or eggs, according to the age of the patient); milk and toast; or, flakes, poached egg on toast, which has been dipped in milk, and stewed fruit, if prune juice has not been given previously.

If a child dislikes milk, do not try to force it by adding chocolate or cocoa. It is not likely to agree with him. It would be far better to use malted milk or "bran coffee" and cream for a hot drink.

At 12:30 a dinner of soup meat or fish, baked potato, fresh vegetable, and simple dessert should be given. The soup should be served in small quantity, but rich and well flavored. Roast bones impart a relishing flavor to soup.

At 3:30 or 4 p. m. a light meal of custard, junket, arrowroot, orange gelatine, milk, eggnog, grape juice or fruit may be given, and at 6 or 6:30 a supper which should be light but nourishing. It is difficult to prescribe a meal without knowing what the choice for the previous ones has been. For instance, if egg is not fancied for breakfast, it should be given or used in the cooking of the supper. If no large amount of fruit has been used previously, it should appear on the supper tray. Otherwise the dessert for this meal should consist of some simple milk pudding—junket, custard, or sago or gelatine pudding with cream. There should be either milk soup or cocoa each evening, a cereal or rice, macaroni or cream toast, and either egg, fish or scraped beef sandwiches until the patient is a young child.

In planning the dietary, the first class or protein foods should be arranged for before all else. After the proper amount of meat has been provided, the most important thing is to see that milk and eggs are not neglected. Many children who do not seem to digest eggs well, will do so perfectly if only the white is given. It can be beaten and incorporated into many articles of food without the patient detecting it, as in arrowroot, after it is cooked, or in baked potato, etc., or the whole egg may be used for sponge cake, muffins, etc., without inducing a sense of being surfeited with egg. In the same way, if entire milk does not agree, the infant formulas may be resorted to. Four ounces of top milk, four of water, and three teaspoonsful of lime water are an

easy one to try. Milk is the surest and best of this group, because it may be used in large quantities with impunity; and in this connection we may say that skim milk is just as valuable as whole milk when we are considering protein, and is digested more easily than whole milk, by *some stomachs*.

Milk may be used in very many ways so as not to pall upon the appetite. It may be given cold or heated as a drink, in eggnog, in cocoa, as a milk soup, or in milk toast. It may be used instead of water for cooking potatoes or cereals, as rice, farina, etc., or with arrowroot or cornstarch, and in milk puddings. It is most easily digested as junket.

The nut butters come under this class of proteins and, if fresh and well prepared, are especially useful if meat is forbidden and milk does not agree. Dried beans, peas, and lentils used for soup, after long cooking, will also furnish a large proportion of proteid. Cottage cheese is a most valuable meat substitute, as it contains nearly as much proteid without any of the undesirable extractives that are present in meat.

The second class is not so apt to be overlooked as it includes so many sub-classes, all of which furnish material to replace the lost fat as well as to furnish heat for the body and energy for work, both muscular and functional. Of the three sub-classes, starch, fat and sugar—fat is worth two and a quarter times as much as the others in *heat production*, a point to remember with some patients.

The fats and oils are especially valuable, and if they are not tolerated by the stomach we may feed them to the patient by inunction. A large amount of olive oil will often be absorbed by the skin if well rubbed in, especially if a previous sponge bath has cleared the pores.

The sugars are valuable as requiring very little energy for digestion and share with fat the advantage of furnishing very concentrated nourishment. This is an important factor in crowding food. Sugar should be used in the cooking, and sweet dried fruits, as raisins and dates, should be given when suitable.

The starchy foods should be thoroughly cooked, eaten slowly, and combined with some other food that is quickly or easily digested. If the digestion of food seems slow, starchy food should not be repeated too frequently, as slow digestion permits fermentation. Oftentimes the hard or crisp crackers are more quickly digested than bread, and flakes, grape nuts, shredded wheat, etc., are more easily handled than mush by weak stomachs.

The feeding should continue to be the subject of earnest thought until the little patient has passed entirely through the period of convalescence, and is as fat and rosy and active as ever, and has more than regained the lost weight. The "between meals" may gradually be withdrawn as the patient improves, or as soon as this plan interferes with the appetite of the regular meals. As nature regains her balance, she shows her lessened need of material by a decreasing appetite, and her suggestion should be heeded.

MEAT SUBSTITUTES.

M. E. JAFFA.

Meat is, perhaps, one of the most universally used articles of the class of concentrated protein foods. Like most things in this world, it has its advantages and disadvantages—it has its advocates and its detractors.

Meat is one of the most easily digested of its group, and is also more stimulating than are even the other forms of animal protein. It has, however, the disadvantage of containing certain elements, the elimination of which may become a strain to kidneys that are not perfectly normal, or have been overworked. Under such circumstances, as also under those of remoteness from the source of supply, physical or ethical repugnance, and economic reasons, the dietary must be constructed without this article.

In eliminating meat from the daily dietary of those accustomed to partaking of it, it becomes necessary to provide proper and adequate substitutes. Many people may benefit by a temporary change of this kind, or even by a permanent one, but there is a large class of individuals to whom such a radical change might prove detrimental, unless proper thought and care are given to their needs. All people can not handle the different meat substitutes equally well, and they must be carefully selected. An average healthy adult with sound digestion can easily obtain the protein his system requires from beans and nuts and cheese, etc. But very young children and people with weak digestions can not be expected to digest beans and cheese. They would require different kinds of meat substitutes, milk and eggs, etc. Neither of these articles is *cheap protein* at present prices, and we are being prevented from buying "skim-milk," which is one of the best and cheapest forms in which we may obtain animal protein, by ordinances as foolish as they are unjust.

Skim-milk, properly labeled and sold at ten cents a gallon, as has often been done, is one of the best, cheapest, and most easily digested forms of protein that we have. We might as well prohibit meat being sold without its fat as milk without its cream, when we are using it as protein and not as a complete food. Skim-milk would be a boon in any family of small income. It can be used to great advantage in the cooking, or made into cottage cheese, besides being used as a drink. While the children of the poor are getting less protein than they require, many animals, such as pigs and calves, are being reared to a healthy and profitable maturity by the large use of skim-milk.

The following table may prove a useful guide for non-meat eaters. The housekeeper can see how much of other protein foods she must substitute for *each pound* of meat that she is giving up. It need not all be taken from *one* kind of food. Beans and eggs, or milk and eggs—or cheese and milk, etc., may be used. If the family has been in the habit of having three pounds of meat a day, they need three times that amount of any of the articles given below, or the given amount of three kinds,—to replace the meat.

One pound of lean meat is equal to (protein alone is being considered) :

- Two and one half quarts of skim-milk.
- Three quarts of whole milk.
- One and one fifth pounds of uncooked old-fashioned oatmeal.
- Six sevenths of a pound of dried beans.
- Five sevenths of a pound of dried peas or lentils, or chick pea.
- Two thirds of a pound of full cream cheese.
- One pound of cottage cheese (fresh and moist).
- Ten or twelve eggs (rich also in fats, etc., not counted).
- Three fifths of a pound of shelled peanuts or pignolias.
- One pound of shelled almonds or walnuts.

It must always be remembered that foods vary in the amount of available protein. We do not assimilate all there is in any food, and, as a rule, the system appropriates less of the protein from beans, nuts, etc., than from the other foods on the list.

The above amounts are intended as guides merely; they are not to be considered as technically exact. It may be valuable to remember, in considering the above list, that milk and cheese and nuts have *none* of the elements that help to cause uric acid troubles in the system. There are others, not found in this list, as bread and macaroni. Beans and peas and eggs have some purin bodies which are harmful elements, but not nearly as much as *meat* or *fish*.

SOME POPULAR ERRORS.

M. E. JAFFA.

There are a number of theories on the subject of foods that seem to have gained a hold on the popular mind, although they have no real foundation in fact. Perhaps they have been accepted readily because they are pleasant to hold, or may make catering less difficult. It would be impossible to discuss many of them at this time, but some of the more common ones may serve as examples.

Coffee Substitutes.—Mistaken ideas have arisen in the popular mind regarding the nutritive value of coffee substitutes. In the past, extravagant claims have been made for the nutritive value of decoctions prepared from these materials. On the label of one appears the statement that "it aids digestion, soothes and quiets worn and wasted nerves, and as a complexion beautifier can not be equaled. It tones the blood, and by its daily use will impart to the skin a healthy glow of youth." This label would be better suited to a patent medicine than to a food or drink and is as false as it is ridiculous. Another brand claims that it "nourishes, strengthens, and vitalizes." Let us see how much nourishment there is in these drinks. Skimmed milk is generally considered a pretty thin beverage, but comparing it with the coffee substitutes, one would have to drink about nine pints of the infusion to get the amount of protein furnished by *one glass* of skimmed milk. The protein furnished by skimmed milk is to be preferred to that furnished by almost any other food. It must be remembered in this connection that in such statements the hygienic question of hot or cold drinks is not considered. Viewed from the nutritive standpoint alone, these coffee substitutes depend more, for their food value, upon the milk, cream, and sugar used than upon their own soluble constituents.

Predigested Foods.—Many people think that it is advisable to use predigested foods in order to lessen the amount of work that the digestive organs have to do. This is only true in pathological conditions, where, for one reason or another, the digestive functions are impaired. In the case of a normal, healthy person, predigested foods should not be extensively used.

Each organ and gland of the body has a certain function to perform. If prevented from performing this function they are not apt to remain in a vigorous condition. The digestive juices must have material to work upon, or else they will either cause irritation by their presence, or cease to be secreted. Either condition is detrimental to health. It is not an infrequent experience to find that when ordinary food is resumed after a prolonged use of predigested ones that the normal secretions and ferments have so diminished as to make digestion very difficult.

This is also true of a too prolonged liquid diet, as milk, for instance. The adult stomach is intended to digest solid food, or a mixture of solid

and liquid, and is often weakened by enforced inactivity through the use of liquids only.

White Bread vs. Whole Wheat Bread.—There are many people who, through faulty information, hold to the belief that white bread contains very little, if any, of the nitrogenous materials, or protein, originally contained in the wheat—hence the *raison d'être* of the expression “White bread is the staff of death.” The question has been fully investigated by the United States Department of Agriculture, and it has been conclusively shown that white bread contains about 3 per cent less protein than graham or whole wheat bread. On the other hand, extended experiments have shown that the protein of the white bread has a far higher digestion coefficient than has the protein of either whole wheat or graham bread. In other words, we do not get the advantage of much of the protein of the bran, which seems to be better digested by cows than by humans. We see, therefore, that the statements that are made disparaging to the use of white bread have no foundation in fact, as far as *nutritive value is concerned*.

There are, however, other elements to consider in this case. The “roughage” that we find in graham bread, due to the presence of the bran or hull, has a mechanical effect upon the intestine, which is valuable *when needed*. It stimulates, by a slight irritant effect, an intestinal wall that might otherwise be sluggish, and helps it to perform its function. This result is desirable if the irritation only brings the intestinal functions up to the normal; any action beyond that point would not be desirable, as the food would be hurried along without proper time being allowed for the absorption of the nutrients by the alimentary canal.

There is a second advantage to the body from the use of graham or bran bread which is only lately beginning to be understood. The bran of wheat contains quite a percentage of organic phosphates, a valuable element. Recent scientific experiments upon cows have shown that many disturbances follow the feeding of bran from which the phosphates have been washed out by water. Cows digest bran far better than human beings can, but in spite of that difference, it is fair to suppose that the phosphates might be taken from the bran by the human system also, as they are easily soluble, even if the protein were comparatively unused. If this is true, then a drink made from bran would be most valuable to those who are in need of phosphates.

Breakfast Foods.—These foods have within the last decade come into very general use all over the country; they are put up in a very sanitary manner, and in general are attractive and palatable to most people. They possess many advantages over the foods which they are intended to replace, viz., the meals used for making “mush” or porridge. The latter require considerable time for preparation, while the former are ready for immediate use. But since the advent of the Fireless Cooker, by means of which the mush may be ready for the earliest or most hastily prepared breakfast, this special advantage of the breakfast foods has rather decreased. It is doubtful, even with these advantages, if the “breakfast foods” would have come into such general use had it not been for the extravagant claims formerly made on the labels of the packages. The statements have been very greatly modified since the operation of the National Foods and Drugs Acts of June 30, 1906, and the different State Acts. To-day the labels are more in accordance with the facts of the case. One can now, by carefully scrutinizing the labels,

arrive at an approximate idea of the value of these foods. This was, with reference to a good many of them, hardly possible five years ago.

In general, it may be said that these breakfast foods, or cereal foods, as they may be called, are made from the different grains—corn, wheat, oats, barley, rice, etc., and therefore the total nutriment contained in the prepared foods can not be any greater than was contained in the grains from which they are prepared. Any other statements appearing on the labels are misleading and deceiving. Wheat is used perhaps more than any other grain. At the same time, there are a number of these foods the preparation of which includes wheat and barley, and sometimes a combination of three grains. One claim that is made by some of the manufacturers of these foods is that they are more or less predigested, and that the starch is partly converted into sugar. The object of this partial conversion, or malting process, is to increase the ease of digestion of such carbohydrates. The conversion is never complete. Investigation shows that at the best only about one half, and, in a considerable number of cases, less than a quarter, of the total amount of starch present has been either fully or partly converted into sugar.

Perhaps some people having weak digestions might derive benefit from the use of these malted preparations as compared with the use of the ordinary mushes. But it could be safely said that with the average healthy person the nutrients of the so-called predigested, or malted, products are no more thoroughly digested than those of the preparations which were not malted, and that the total nutriment contained in these preparations is not greater, either in protein content or fuel value, than the good old-fashioned oatmeal. It is also true that the available nutrients of the cereal breakfast foods are less than those of either graham, whole wheat, or white bread. It must not be thought from these statements that breakfast foods are not wholesome or nutritious, but they should be considered in accordance with their nutritive value and also from the standpoint of economy. Breakfast foods cost two or three times as much as the old-fashioned meals furnishing the same amount of nourishment.

Soup and Soup-meat.—Perhaps even to-day a large number of people still hold to the idea that all of the "nourishment" is in the soup and none in the soup-meat. Scientific investigation has shown, however, that elements that are dissolved out of the meat are mainly stimulating in their character and that nearly all of the real protein, the tissue building material, remains in the meat. The economical way to handle the meat, then, would be to take it out of the soup pot when it has cooked long enough to be tender, and to leave the bones to cook on for hours until all the gelatinoids are extracted.

While recording "errors," however, it is only fair to mention those made by investigators as well as by the laymen. There has been a tendency on the part of physicians and other initiated persons, during the past few years, to decidedly decrease if not eliminate meat soup from the dietary for the reason, as stated above, that it is stimulating and not nourishing. Later investigations, however, have shown that, while the percentage of nutriment in soup is *indeed very small*, it has a special value in the diet for other reasons. Soup and meat extracts have the power of stimulating the first flow of gastric juice which is always secreted in response to a nerve stimulation—taste, odor, hunger,

etc.—and is called “appetite juice.” The other digestive juices are secreted as a result of chemical stimulation. Soup, then (if not contraindicated on account of its uric acid forming bodies), is helpful in conditions of weak digestion or lack of acidity to aid in exciting gastric secretion. In this way the value placed upon soup by the “old-fashioned folk” has been partially justified. Its use between meals as “nourishment” would not rest on as secure a foundation as when it precedes a meal. The more *flavor* the soup has, the greater its value would be. For this purpose ends of wasted meat or bone prove valuable.

THE CONSUMER AND THE PURE FOOD LAW.

M. E. JAFFA.

The California pure food and drugs law has been in operation for the last four years, and the results have been gratifying, and the attention accorded it by the laity has been considerable and continuous. The attention, however, has perhaps not always been the kind that is productive of the best results. The interest in such a practical subject must be active and forceful and not passive. Before the utmost good can be accomplished by the law, the majority of the consumers must coöperate intelligently and earnestly with the state authorities in the enforcement of these acts. Both the Federal and State acts have a double purpose. They aim to safeguard the food of the consumer and protect the honest manufacturer. Some phases of the acts are therefore of more vital interest to one set of people and some to another.

A brief consideration of the main divisions of the infringements of the law will make this point clear.

There are two main classes of infringements, (1) adulteration and (2) mislabeling or misbranding. Adulterations are divided into two subdivisions, the deleterious or injurious and the fraudulent or deceptive. The first set is by far the most important as it is the *only one* that affects the health of the consumer. The presence of such adulterations in food materials is never declared on the label. Neither can they be discovered by any ordinary household test. They are, therefore, beyond the power of the housekeeper to cope with and must be intrusted entirely to a proper enforcement of the law. They usually consist of injurious preservatives, colors, etc.

The second set of adulterations, the fraudulent, is mostly pecuniary in character. Under this head are grouped all the cases where a cheap material has been added to, or mixed with, a more expensive article for the purpose of increasing the profit. From the standpoint of the consumer, some are gross frauds, while others are minor affairs and are considered, therefore, from the standpoint of the manufacturer. In the case of the adulteration of olive oil with cottonseed oil, the financial difference is an important item to the consumer as well as to the dealer. But when a cheap, though harmless, ingredient is added to spice, the adulteration is of slight pecuniary interest to the consumer, who buys perhaps one ten-cent can in several months, while to the manufacturer, who sells thousands upon thousands of cans, the additional profit, over that of the honest manufacturer, might be exceedingly large.

The second class of infringements of the pure food law, the mislabeling or misbranding may also be divided into different subdivisions, according to whether the misrepresentations are made with a purpose

of deceiving in regard to material used, its nutritive value, the weight, etc., or whether they are purely technical errors, such as neglect to declare a harmless color allowed by law, etc. These technical errors are being eliminated very rapidly as the manufacturers and dealers are becoming educated. The same decrease in the number of infringements is also true with reference to all injurious substances. The manufacturers and dealers have from the beginning shown a most gratifying and praiseworthy desire to conform to the law.

It would appear then that the chief interest of the consumer is divided between a group of fraudulent adulterations and some subdivisions of mislabeling; but a second investigation will show that they are often too closely connected to form two well defined classes. Almost any of the harmless adulterants are only *frauds* and are only classed as such because their presence is not declared upon the label. The law allows the purchaser to buy mixed oils, if he chooses, or artificially colored and flavored syrups; the manufacturer is allowed to provide them for those who wish to buy—*only there must be no deception*. The can of mixed oils would be differently classified under different conditions. If labeled "olive oil," it would be termed adulterated. If the words "olive oil" appeared on the label in large print and "mixed with cottonseed oil" in small print, it would be called mislabeled and transferred to another class of infringements. If, however, the wording were all in the same sized large type, the can would pass muster under the most careful inspection and appear nowhere in the list.

The responsibilities of the consumer in coöperating with the state seem to be about as follows:

1. To read the labels and acquire a knowledge of what the Government demands that the label shall tell him. Any brief article, like the present one, can only be suggestive.

2. To encourage the enterprising tradesmen to have his goods up to the standards, thereby, in turn, encouraging the honest manufacturer who puts up an honest article and guarantees it.

3. To be willing to pay a fair price for the best article, and not put a premium on dishonesty by demanding the best quality for less than the fair price.

4. To insist upon cleanliness in the handling of fresh products. There is a general sanitation law covering such case, but it would be impossible for the state to furnish adequate inspection without local aid. The housekeepers of the community, upon whom the tradesmen depend for their living, could by united efforts *set their own standards* for these establishments.

ILLEGALLY LEGAL.

There are still a number of manufacturers and dealers who are offering to the public both foods or food products, and medicine, under deceptive or fraudulent representations, who can not at present be punished. They manage to escape on a technicality and for this reason the public spirited consumers should be all the more determined to withhold their patronage and support.

No law can be made so definite and so specific as to cover every possible detail of every case that may come up, and as a result there are usually some malefactors who manage to evade or circumvent the regular law. While the practices of such people are legal in the sense that they can not at present be prevented or punished under the strict interpreta-

tion of the letter of the law, they are deceiving the public just as much and oftentimes more than are those people who have been and may be punished. They disobey the spirit of the law in every sense, and intentionally deceive the consumer.

The method usually employed in carrying out these deceptions is either by advertisements in newspapers or by pamphlets, leaflets or dodgers (the last a very good name for such deception) or anything that is *not* a label on the package.

The law is very definite in regard to labels, but owing to the present ruling of the Supreme Court can not take cognizance of literature handed out with the package; therefore, when a purchaser sees some very attractive name or some very convincing statement of superiority or nutritive value, etc., on a handbill, which statement *does not appear on the label of the package*, he may feel assured that there is a misrepresentation which the manufacturer *knows to be such* and which he purposely refrains from repeating on the label for fear of prosecution under the law.

All friends of the pure food and drugs act should interest themselves in this phase of the question and create a public sentiment against such practices. They should also try to interest their representatives in the legislature so as to further the passage of additional laws that will cover this kind of fraud.

ANALYTICAL WORK FOR FISCAL YEAR 1910-1911.

A summary of the analytical chemical work of the State Laboratory for the year—August 1, 1910, to August 1, 1911—is presented herewith. Special data will be published as usual in the Biennial Report of the State Board of Health. It was considered, however, that a summary of such work might prove of interest to the readers of this Bulletin, which deals with the general subject of foods.

Summary of Analytical Work State Food and Drug Laboratory, August 1, 1910, to August 1, 1911.

A. FOODS AND FOOD PRODUCTS.

Material.	Number adulterated.	Number misbranded.	Number adulterated and misbranded.	Number not in violation of California pure foods act.	Total.
Baking powder		1		4	5
Beer				1	1
Breads	5				5
Butter		2		6	8
Beverages	7	14	3	47	71
Cereals	3	1		8	12
Confectionery		8		31	39
Coffee	8			2	10
Colors	1			5	6
Condiments—					
Miscellaneous	2	31	1	25	59
Prepared mustard		3		4	7
Sweet pickles	2	20		13	35
Sour pickles		1		8	9
Catsup		13		6	19
Cream		1		2	3
Eggs	1	32	1	22	56
Extracts—flavoring	12	36	26	71	145
Fish		9		14	23
Flour	3	1		1	5
Fruit		1		11	12
Honey				8	8

**Summary of Analytical Work State Food and Drug Laboratory, August 1, 1910, to
August 1, 1911—Continued.**

Material.	Number adulter- ated.	Number mis- branded.	Number adulterated and misbranded.	Number not in violation of California pure drugs act.	Total.
Ice cream		5		30	35
Jams and jellies	8			24	32
Lard	3				3
Liquors	4	6		6	16
Meats—					
Canned				7	7
Chopped or "Hamburger"	79		1	96	176
Sausage—pork	9	2	2	13	26
Sausage—miscellaneous	2	2	2	3	9
Milk		2		9	11
Oil—olive				1	1
Pastes	1	1			2
Preservatives				1	1
Rice		11		17	28
Sago	9			3	12
Syrups—table	8	2		14	23
Syrups—soda water	1	10		2	13
Spices	13			60	75
Sugars	2	2		1	2
Vegetables		2			2
Vinegars	6	6	1	49	64
Waters		3		1	4
Total foods	189	228	37	626	1,080
Per cent	17.5	21.1	3.4	58.0	100

B. DRUGS.

Alcohol				5	5
Alum	1			2	3
Arnica, tincture		9		1	10
Benzoin, tincture		4			4
Camphorated oil	12			15	27
Camphor		12			12
Citrate of magnesia				7	7
Colic remedies, etc.		13		1	14
Cough remedies, etc.		50		8	58
Cream of tartar				4	4
Epsom salt, etc.				11	11
Green soap, tincture		2		1	3
Headache powders		86		7	93
Iodine, tincture		8			8
Jamaica ginger		14		2	16
Kidney cures		9			9
Lung remedies		8			8
Miscellaneous	7	68		15	90
Paregoric		7		1	8
Peppermint, essence	1	6			7
Sulphur	7			7	14
Sweet spirits of nitre		12			12
Witch hazel		11		3	14
Total drugs	28	319		90	437
Per cent	6.5	73.0		20.5	100

C. GENERAL SUMMARY.

Total food samples	189	228	37	626	1,080
Total drug samples	28	319		90	437
Grand total	217	547	37	716	1,517
Per cent	14.3	36.1	2.4	47.2	100

FARMERS' BULLETINS ON HUMAN FOODS.

The following bulletins can be obtained free upon application to the Secretary of Agriculture, Washington, D. C. When making application for them, it will be necessary to state that they belong to the Farmers' Bulletin Series:

- No. 34. Meats: Composition and Cooking.
- No. 85. Fish as Food.
- No. 93. Sugar as Food.
- No. 121. Beans, Peas, and other Legumes as Food.
- No. 125. Protection of Food Products from Injurious Temperature.
- No. 128. Eggs and Their Uses as Food.
- No. 131. Detection of Oleomargarine and Renovated Butter.
- No. 142. Principles of Nutrition and Nutritive Value of Food.
- No. 175. Manufacture of Unfermented Grape Juice.
- No. 182. Poultry as Food.
- No. 203. Canned Fruit, Preserves and Jellies.
- No. 249. Cereal Breakfast Foods.
- No. 252. Maple Sugar and Sirup.
- No. 281. Experiment Station Work XL.
- No. 293. Use of Fruit as Food.
- No. 298. Food Value of Corn and Corn Products.
- No. 332. Nuts and Their Uses as Food.
- No. 348. Bacteria in Milk.
- No. 359. Canning of Vegetables for the Home.
- No. 363. The Use of Milk as Food.
- No. 375. Care of Food in the Home.
- No. 389. Bread and Bread Making.
- No. 391. Economical Use of Meat in the Home.
- No. 413. The Care of Milk and Its Uses in the Home.
- No. 426. Canning Peaches on the Farm.
- No. 431. Peanut.

Some additional Farmers' Bulletins of general interest:

- No. 377. Harmfulness of Headache Mixtures.
- No. 393. Habit Forming Agents.
- No. 449. Rabies or Hydrophobia.
- No. 450. Some Facts About Malaria.
- No. 459. House Flies.
- No. 475. Ice Houses.
- No. 478. How to Prevent Typhoid Fever.

DEPARTMENT REPORTS.

REPORT OF BUREAU OF VITAL STATISTICS FOR SEPTEMBER.

GEORGE D. LESLIE, Statistician.

State Totals and Annual Rates.—The following table shows for California as a whole the birth, death, and marriage totals for the current and preceding months in comparison with those for the corresponding months of last year, as well as the annual rates per 1,000 population represented by the totals for the current and preceding months. The rates are based on an estimated midyear population of 2,488,256 for California in 1911, the estimate having been made by the Census Bureau method with slight modifications.

Birth, Death and Marriage Totals, with Annual Rates per 1,000 Population for Current and Preceding Months, for California: September.

MONTH.	MONTHLY TOTAL.		Annual rate per 1,000 population. 1911.
	1911.	1910.	
September—			
Births	2,902	2,796	14.2
Deaths	2,532	2,472	12.4
Marriages	2,446	2,223	12.0
August —			
Births	3,129	2,773	14.8
Deaths	2,577	2,549	12.2
Marriages	2,303	2,114	10.9

The birth and marriage totals for September, as for August, were much greater in 1911 than in 1910, while in both months the death totals were not far from the same each year.

County Totals.—The first table on the following page shows the monthly birth, death, and marriage totals for the principal counties of the State, the list being limited to counties having a population of at least 25,000 according to the Federal Census of 1910. Totals are also shown for San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), as well as for Los Angeles and Orange counties together.

City Totals.—The second table on the following page gives the birth and death totals for the principal freeholders' charter cities, the list including all chartered cities with a census population of at least 15,000 in 1910. Totals are given likewise for San Francisco in comparison with Oakland, Alameda, and Berkeley, the three cities adjoining one another on the east shore of San Francisco Bay, as well as for Los Angeles in comparison with neighboring chartered cities (Long Beach, Pasadena, Pomona, and Santa Monica).

Birth, Death and Marriage Totals, for Principal Counties: September.

County.	SEPTEMBER, 1911.		
	Births.	Deaths.	Marriages.
California	2,902	2,532	2,446
Counties of more than 25,000 population (1910):			
Alameda	304	244	268
Butte	50	39	11
Contra Costa	37	17	16
Fresno	74	66	70
Humboldt	35	27	34
Kern	41	31	28
Los Angeles	672	557	560
Marin	31	33	89
Orange	35	42	101
Riverside	33	27	36
Sacramento	91	81	91
San Bernardino	61	59	59
San Diego	81	63	99
San Francisco	541	520	431
San Joaquin	41	90	47
San Mateo	24	23	32
Santa Barbara	49	25	24
Santa Clara	105	100	82
Santa Cruz	27	24	19
Solano	31	25	17
Sonoma	59	29	36
Tulare	43	24	16
Selected groups:			
San Francisco and other bay counties	937	837	836
Los Angeles and Orange counties	707	599	661

Birth and Death Totals, for Principal Cities: September.

City.	SEPTEMBER, 1911.	
	Births.	Deaths.
Freeholders' charter cities	1,778	1,515
Cities of more than 15,000 population (1910):		
Alameda	33	22
Berkeley	52	24
Fresno	31	16
Long Beach	22	17
Los Angeles	491	367
Oakland	191	155
Pasadena	25	40
Riverside	19	11
Sacramento	64	52
San Diego	61	51
San Francisco	541	520
San Jose	37	27
Stockton	20	50
Selected groups:		
San Francisco	541	520
Oakland, Alameda and Berkeley	276	201
Total, Bay cities	817	721
Los Angeles	491	367
Neighboring cities	58	69
Total	549	436

Causes of Death.—The following table shows the classification of deaths in California for the current month, in comparison with the preceding month:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths for Current and Preceding Month, for California: September.

Cause of Death.	Deaths: September	Proportion per 1,000.	
		September	August.
All causes.....	2,532	1,000.0	1,000.0
Typhoid fever.....	45	17.8	12.8
Malarial fever.....	17	6.7	7.8
Measles.....	4	1.6	1.9
Scarlet fever.....	3	1.2	0.4
Whooping-cough.....	10	4.0	5.8
Diphtheria and croup.....	11	4.3	2.3
Influenza.....	3	1.2	0.4
Other epidemic diseases.....	10	3.9	5.4
Tuberculosis of lungs.....	317	125.2	127.3
Tuberculosis of other organs.....	56	22.1	16.7
Cancer.....	176	69.5	60.9
Other general diseases.....	124	49.0	60.1
Meningitis.....	27	10.7	10.1
Other diseases of nervous system.....	188	74.2	68.7
Diseases of circulatory system.....	386	152.4	157.9
Pneumonia and broncho-pneumonia.....	128	50.6	41.1
Other diseases of respiratory system.....	41	16.2	17.9
Diarrhea and enteritis, under 2 years.....	112	44.2	51.6
Diarrhea and enteritis, 2 years and over.....	27	10.7	14.4
Other diseases of digestive system.....	168	66.4	56.3
Bright's disease and nephritis.....	161	63.6	74.1
Childbirth.....	31	12.2	13.6
Diseases of early infancy.....	92	36.3	30.7
Suicide.....	69	27.3	26.4
Other violence.....	210	82.9	91.6
All other causes.....	116	45.8	43.8

In September there were 386 deaths, or 15.2 per cent of all, from diseases of the circulatory system, and 373, or 14.7 per cent, from various forms of tuberculosis. Heart disease thus led tuberculosis somewhat.

Other notable causes of death were: Diseases of digestive system, 307; violence, 279; diseases of nervous system, 215; cancer, 176; diseases of respiratory system, 169; Bright's disease and nephritis, 161; and epidemic diseases, 103.

The deaths from epidemic diseases were as follows: Typhoid fever, 45; malarial fever, 17; diphtheria and croup, 11; whooping-cough, 10; and all other epidemic diseases, 20.

The deaths from the four leading epidemic diseases reported for the month were distributed by counties as follows:

TYPHOID FEVER.		MALARIAL FEVER.		DIPHTHERIA AND CROUP.	
Alameda	3	Alameda	1	Alameda	3
Amador	1	Butte	2	Fresno	2
Butte	1	El Dorado	1	Los Angeles	2
Contra Costa	1	Glenn	1	Monterey	1
Fresno	1	Lassen	1	Orange	1
Imperial	1	Merced	1	San Francisco	1
Kern	2	Placer	2	Siskiyou	1
Los Angeles	8	Sacramento	1	Total	11
Orange	2	San Francisco	1		
Riverside	1	Shasta	2		
Sacramento	4	Tehama	2		
San Diego	1	Yuba	2		
San Francisco	11	Total	17		
San Joaquin	2				
Santa Clara	1				
Solano	1				
Sutter	1				
Tulare	1				
Tuolumne	2				
Total	45				

WHOOPING-COUGH.	
Butte	1
Contra Costa	1
Los Angeles	6
San Francisco	2
Total	10

Geographic Divisions.—The following table presents data for geographic divisions, including the metropolitan area, or San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), in comparison with the rural counties of Northern and Central California:

Deaths from Main Classes of Diseases, for Geographic Divisions: September.

Geographic Division.	DEATHS: SEPTEMBER.										
	All Causes-----	Epidemic Diseases ---	Tuberculosis (All Forms)	Cancer -----	Diseases of Nervous System-----	Diseases of Circulatory System -----	Diseases of Respiratory System -----	Diseases of Digestive System-----	Bright's Disease and Nephritis-----	Violence ---	All Other Causes-----
THE STATE----	2,532	103	373	176	215	386	169	307	161	279	363
Northern California	299	18	29	15	34	42	18	35	14	44	50
Coast counties --	126	—	14	8	17	20	7	19	6	10	25
Interior counties	173	18	15	7	17	22	11	16	8	34	25
Central California--	1,429	57	183	96	111	224	110	183	97	152	216
San Francisco --	520	20	63	34	25	82	50	71	40	54	81
Other bay counties -----	317	10	46	28	28	58	18	36	21	29	43
Coast counties --	168	4	27	13	20	19	9	25	12	17	22
Interior counties	424	23	47	21	38	65	33	51	24	52	70
Southern California	804	28	161	65	70	120	41	89	50	83	97
Los Angeles ----	557	21	117	54	41	81	26	62	31	53	71
Other counties--	247	7	44	11	29	39	15	27	19	30	26
Northern and Central California	1,728	75	212	111	145	266	128	218	111	196	266
Metropolitan area-----	837	30	109	62	53	140	68	107	61	83	124
Rural counties--	891	45	103	49	92	126	60	111	50	113	142

Notice of Error in Report for August, 1911.—The September issue of the bulletin contained an incorrect table of morbidity. Through an inadvertence the number of deaths for scarlet fever was omitted. This threw the rest of the table figures one line too high—thus the most striking number, 192, should have been for tuberculosis instead of for bubonic plague, as it stands. The following table is correct:

Corrected Morbidity Report for August, 1911.

Disease.	Cases.	Places.
Typhoid fever	106	21
Malarial fever	50	7
Smallpox	19	11
Measles	87	6
Scarlet fever	69	17
Whooping-cough	54	8
Diphtheria and croup	64	23
Influenza	8	2
Plague	1	1
Tuberculosis of lungs	192	15
Glanders	2	1
Anthrax	1	1
Rabies	6	2
Pellagra	1	1
Syphilis	5	4
Gonorrhoea	20	6
Trachoma	1	1
Uncinariasis	1	1

Morbidity Report for September, 1911.

Disease.	Cases.	Places.
Typhoid fever	120	20
Malarial fever	89	5
Smallpox	19	6
Measles	232	11
Scarlet fever	69	19
Whooping-cough	46	3
Diphtheria and croup	60	23
Influenza	24	2
Plague	1	1
Tuberculosis of lungs	217	24
Mumps	30	5
Anthrax	3	2
Glanders	13	1
Chicken-pox	67	5
Rabies	4	2
Poliomyelitis	2	2
Gonorrhoea	23	8
Syphilis	4	2

REPORT OF FOOD AND DRUG LABORATORY FOR SEPTEMBER.

Professor M. E. JAFFA, Director.

The work of the Laboratory for the past month has been somewhat miscellaneous in character, including the analysis and examinations of ice creams, for the purpose of ascertaining whether or not samples are up to the standard requirements for fat; chopped meats and sausages, for the purpose of ascertaining the presence or absence of artificial preservatives and coloring; spices examined for purity and presence of cereal; extracts—lemon, vanilla, etc.—examined for purity and strength; eggs, examined with reference to age of sample; condiments, etc. A large number of drugs have also been examined.

No Food Inspection Decisions have been received from the U. S. Department of Agriculture during the past month, but a considerable number of Notices of Judgments have been published, a résumé of the same appearing below. Full notices may be obtained upon application to the Director of the State Laboratory, University of California, Berkeley, Cal.

The following food and drug cases were referred to district attorneys for prosecution:

PURE FOOD AND DRUG CASES REFERRED TO DISTRICT ATTORNEYS, OCTOBER 7, 1911.

Name of article.	Offense.	Manufacturer or jobber.	Accused dealer.
Sloan's Chill Remedy ----- Worcestershire Sauce -----	Mislabeled. Contains alcohol not declared on label. Mislabeled. Contains benzoates not declared on label.	Dr. E. S. Sloan, Boston, Mass. J. Hill & Sons Co., Los Angeles.	K. J. Slaughter & Co., Folsom. J. J. Silva, Los Banos.
Mexican Relish -----	Mislabeled. Contains benzoates not declared on label.	Pacific Preserve Co., San Francisco.	A. J. Alves & Co., Newman.
Green Chili Sauce -----	Adulterated. Contains salicylates.	Loeb, Fleishman & Co., Los Angeles.	J. J. Silva, Los Banos.
Cross Chorodine ----- Kilmer's Sure Headache Cure. -----	Mislabeled. Contains alcohol not declared on label. Mislabeled. Contains acetanilid not declared on label.	Dr. Killmer & Co., South Bend, Ind.	H. Nakamura, Los Angeles. Vincent's Pharmacy, Pasadena.
Headache Powders -----	Mislabeled. Contains acetanilid not correctly declared. Label not in English.	-----	Hashizuma Bros., Los Angeles.
Headache Powders -----	Mislabeled. Contains acetanilid not correctly declared. Label not in English.	-----	S. Kojina, Los Angeles.
Fresh Eggs ----- Eastern Ranch Eggs Fresh ----- Chopped Meat ----- Extract of Lemon -----	Mislabeled. Not fresh eggs. Mislabeled. Not fresh eggs. Adulterated. Contains sulphur dioxide. Adulterated. Below standard lemon oil.	----- Wm. Menzel Co., Redding. S. H. Tyler & Son., San Francisco.	Pappas & Ulahos, Los Angeles. H. K. Koga, Los Angeles. Wm. Menzel Co., Redding. (Dealer protected by guaranty from manufacturer.)
Pawnee Indian Balm -----	Mislabeled. Contains alcohol not declared on label.	Pawnee Indian Medicine Co., San Francisco.	Economic Drug Co., San Francisco.
Gluten Meal -----	Adulterated. Deficient in nitrogen.	Loma Linda Food Co., Loma Linda.	(Manufacturer assumed responsibility.)
Pure Apple Cider -----	Adulterated. Imitation product.	-----	S. Umeda, Los Angeles.

NOTICES OF JUDGMENTS.

The following Notices of Judgment have been received at the Laboratory since the publication of the last monthly bulletin; full copies of these may be obtained by addressing the Director of the State Food and Drug Laboratory, Berkeley, Cal.

Number of case and offense charged.	Name and address of defendant or manufacturer.	Specification of offense and disposition of case.
936—Adulteration and misbranding of Jamaica ginger and of flavoring extracts (peppermint and wintergreen).	Liebenthal Bros. & Co., Cleveland, O.	Peppermint found to be highly dilute solutions, containing little or no oil of peppermint. Ginger contained highly dilute solution of ginger extract not over one half standard of such article. Fine, \$50 and costs.
937—Adulteration and misbranding of tomato catsup.	Pressing & Orr Co., Norwalk, Ohio.	Product found to contain yeasts, spores, bacteria, mold, etc., filthy, decomposed and putrid vegetable substance. Fine, \$25 and costs.
938—Adulteration of frozen eggs.	A. Grossenbach Co., Milwaukee, Wis.	Product was in whole or in part filthy, decomposed, and putrid, and unfit for human consumption. Fine, \$25.
939—Adulteration and misbranding of flavoring extracts (vanilla, lemon and strawberry).	Bruce & West Manufacturing Co., Cleveland, Ohio.	False and misleading statements. Lemon consisted of dilute extract of lemon artificially colored. Fine, \$50 and costs.
940—Misbranding of flour	Wall-Rogalsky Milling Company, McPherson, Kansas.	Label conveyed the impression that flour had been manufactured by Camellia Flour Co. at Pittsburg, Pa., when in truth it was manufactured by the Wall-Rogalsky Milling Co. of Kansas. Released under bond after paying costs.
941—Misbranding of a drug product—"White's Headease."	O. P. White, Rusk, Texas.	False and misleading statements. Plea of guilty. Imposed fine of \$25.
942—Misbranding of a drug product—"Ammon Phenyl."	International Chemical Co., Palisades Park, N. J.	False and misleading statements. Fine, \$25.
943—Adulteration of tomato ketchup.	Michigan Refining and Preserving Co., Menominee, Mich.	Product consisted of filthy, decomposed and putrid vegetable substance. Ordered destroyed.
944—Adulteration of shelled peanuts.	Gwaltney-Bunkley Peanut Company, Smithfield, Va.	Product was mixed with insect eaten, shrunken, dark and rancid nuts, etc., filthy, decomposed and vegetable substance. Released under bond after paying costs.
945—Adulteration of shelled peanuts.	Franklin Peanut Co., Franklin, Va.	Product consisted in part of a filthy, decomposed vegetable substance, worm-eaten peanuts, etc. Ordered destroyed. Released under bond after paying costs.
946—Adulteration of evaporated peaches.	A. B. Seeley & Son, Elizabeth City, N. C.	Product consisted in part of filthy animal and vegetable substances, beetles, worms, worm excreta, yeasts, etc. Ordered destroyed.
947—Adulteration of tomato catsup.	Product shipped from Pennsylvania to Maryland.	Consisted of filthy, decomposed tomatoes. Ordered destroyed.
948—Adulteration of prunes.	C. W. Stevens Co., Elizabeth City, N. C.	Product consisted in part of filthy, vegetable substance; worm-eaten prunes. Ordered destroyed.
949—Adulteration and misbranding of evaporated apples.	Teasdale Fruit and Nut Products Co., Rogers, Ark.	Product consisted in part of filthy, decomposed vegetable substances. Released under \$1,000 bond after paying costs.
950—Adulteration of tomato catsup.	Hyman Pickle Co., Louisville, Ky.	Product consisted of a filthy and decomposed vegetable substance. Fine, \$25 and costs.

NOTICES OF JUDGMENTS—Continued.

Number of case and offense charged.	Name and address of defendant or manufacturer.	Specification of offense and disposition of case.
951—Adulteration and misbranding of coffee.	Norton & Curd Coffee Co., Louisville, Ky.	Inferior coffee substituted. Fine, \$25 and costs.
952—Misbranding of preserves—"L. P. C." brand	Goodwin Preserve Co., Louisville, Ky.	Product contained added phosphoric acid which was not mentioned upon said labels. Fine, \$25 and costs.
953—Adulteration and misbranding of "Salad Oil."	J. Henry Smith (Peter Smith & Sons), Detroit, Mich.	Adulterated because cottonseed oil had been substituted in part for olive oil. Fine, \$5 and costs.
954—Misbranding of "Matzos."	B. C. Friedman, Philadelphia, Pa.	Misbranded because the labels indicated that the product was manufactured in Baltimore, Md., when in truth it was manufactured in Philadelphia, Pa. Released under \$300 bond after paying costs.
955—Adulteration of tomato catsup.	American Preserve Co., Philadelphia, Pa.	Consisted in part of filthy, decomposed tomatoes. Ordered destroyed by the marshal.
956—Adulteration of tomato catsup.	Philadelphia Pickling Co., Philadelphia, Pa.	Product consisted in part of filthy and decomposed tomatoes. Ordered destroyed.
957—Adulteration of shelled peanuts.	Bain Peanut Co., Suffolk, Va.	Product consisted in part of a filthy and decomposed vegetable substance, to wit, 92.5 per cent worm-eaten nuts. Ordered destroyed.
958—Adulteration of coffee	Grandy Jobbing Co., Norfolk, Va.	Product consisted in whole or in part of a filthy, decomposed or putrid vegetable substance. Ordered destroyed.
959—Misbranding of "Pineapple Oranges."	S. J. Sligh & Co., Jacksonville, Fla.	Label contained false and misleading statements. Released under \$500 bond after paying costs.
960—Adulteration of ice cream cones.	Valvona-Marchiony Company, Brooklyn, N. Y.	Contained an added deleterious ingredient, boric acid. Fine, \$10.
961—Adulteration of frozen eggs.	Chas. B. Ford Co., Chicago, Ill.	Product consisted in whole or in part of filthy, decomposed and putrid animal and vegetable substance. Ordered destroyed.
962—Misbranding of a drug product—"Dr. Higbee's Cough, Cold and Grip Powders."	Edwin W. Higbee, (German Medicine Co.), Northampton, Mass.	False and misleading statements. Plea of <i>nolo contendere</i> . Placed on file.
963—Adulteration of frozen eggs.	Ford & Howard Co., Chicago, Ill.	Product consisted of filthy, decomposed and putrid animal or vegetable substance. Ordered destroyed.
964—Adulteration of confectioners' brown glaze.	Rogers-Pyatt Shellac Co., Chicago, Ill.	Product contained an added poisonous and deleterious ingredient, to wit: methyl alcohol. Fine, \$50 and costs.
965—Misbranding of a drug product—"Smith's Quinets."	C. E. Rupert Smith, Philadelphia, Pa.	False and misleading statements. Fine, \$5.
966—Misbranding of lemon extract.	C. L. Heinle Specialty Co., Philadelphia, Pa.	Dilute extract containing less than $\frac{1}{4}$ of 1 per cent oil of lemon. Fine, \$50.
967—Misbranding and alleged adulteration of vinegar.	Leroux Cider and Vinegar Co., Toledo, Ohio.	Product, imitation. Released under bond after paying costs.
968—Misbranding of Buckhead Lithia Water.	Buckhead Springs Co., Buckhead, Va.	Label false and misleading. Ordered destroyed.
969—Adulteration and misbranding of "True Egg Substitute."	True Egg Substitute Company, Santa Monica, Cal.	Milk casein, starch and egg albumen mixed with product. Artificially colored. False and misleading statements. Released under \$500 bond after paying costs.
970—Adulteration of frozen eggs.	St. Louis, Mo.	Product filthy and decomposed. Ordered destroyed.

REPORT OF THE STATE HYGIENIC LABORATORY FOR SEPTEMBER, 1911.

WILBUR A. SAWYER, Director.

PLAGUE.

On September 20, 1911, the Director investigated, in conjunction with Dr. Geo. W. McCoy of the U. S. P. H. & M. H. Service, a case of suspected plague in a man on a farm near Ripon in San Joaquin County. The symptoms and history of the case were characteristic of bubonic plague. Examination of the infected glands revealed abundant plague bacilli. The organisms from this case were grown in culture at the laboratory and showed the characteristics of plague bacilli. Examinations were made showing conclusively that the case was one of bubonic plague. The disease had been demonstrated by the U. S. P. H. & M. H. Service many months before in ground squirrels in the section of land in which the patient lived.

RABIES.

Examinations at the laboratory indicate that the epidemic of rabies is still spreading northward. The disease has now been shown to exist in Merced County.

Summary of Examinations made in the California State Hygienic Laboratory during the month of September, 1911.

Main Laboratory at Berkeley:

Condition suspected:

	Positive.	Negative.	Incon- clusive.	Total.
Anthrax	2	3	--	5
Diphtheria	9	19	--	28
Malaria	1	5	--	6
Plague	1	--	--	1
Rabies	5	5	--	10
Tuberculosis	8	21	--	29
Typhoid	6	24	1	31
Water	2	8	3	13
Miscellaneous	1	1	--	2
				<u>125</u>

Fresno Branch Laboratory;

Condition suspected:

Diphtheria	5	1	--	6
Malaria	1	--	--	1
				<u>7</u>

Los Angeles Branch Laboratory;

Condition suspected:

Diphtheria	--	4	--	4
Typhoid	--	1	--	1
Miscellaneous	--	--	1	1
				<u>6</u>

Total number of examinations 138

LIST OF COUNTY HEALTH OFFICERS.

County.	Health Officer.	Address.
Alameda	Dr. C. L. McKown	Niles
Alpine*	County Recorder Frank Smith	Markleeville
Amador	Dr. E. E. Endicott	Jackson
Butte	Dr. L. Q. Thompson	Gridley
Calaveras	Dr. E. W. Weirich	Angels Camp
Colusa	Dr. C. A. Poage	Colusa
Contra Costa	Dr. F. S. Gregory	Pittsburg
Del Norte*	County Recorder N. G. McVay	Crescent City
El Dorado	Dr. L. M. Leisenring	Placerville
Fresno	Dr. W. T. Burks	Fresno
Glenn	Dr. J. A. Randolph	Willows
Humboldt	Dr. E. H. Bryant	Eureka
Imperial	Dr. Virgil McCoombs	El Centro
Inyo	Dr. I. J. Woodin	Independence
Kern	Dr. G. M. Bumgarner	Bakersfield
Kings	Dr. Ralph Motherol	Hanford
Lake	Dr. W. E. Upton	Kelseyville
Lassen	Dr. W. E. Dozier	Susanville
Los Angeles	Dr. E. O. Sawyer	Los Angeles
Madera	Dr. Mary R. Butin	Madera
Marin	Dr. J. H. Kuser	Novato
Mariposa	Dr. F. L. Wright	Mariposa
Mendocino	Dr. J. Liftchild	Ukiah
Merced	Dr. C. H. Castle	Merced
Modoc	Dr. John Stile	Alturas
Mono*	County Recorder Geo. Delury	Bridgeport
Monterey	Dr. Garth Parker	Salinas
Napa	Dr. E. Z. Hennessey	Napa
Nevada	Dr. Carl P. Jones	Grass Valley
Orange	Dr. John Wehrly	Santa Ana
Placer	Dr. O. L. Barton	Loomis
Plumas	Dr. F. D. Walsh	Quincy
Riverside	Dr. George E. Tucker	Riverside
Sacramento	Dr. Hugh Beattie	Elk Grove
San Benito	Dr. J. M. O'Donnell	Hollister
San Bernardino	Dr. Philip M. Savage	San Bernardino
San Diego	Dr. Nathan Hunt	San Diego
San Francisco	Dr. R. G. Brodrick	San Francisco
San Joaquin	Dr. Wm. Friedberger	Stockton
San Luis Obispo	Dr. H. M. Cox	San Luis Obispo
San Mateo	Dr. W. G. Beattie	Colma
Santa Barbara	Dr. J. C. Bainbridge	Santa Barbara
Santa Clara	Dr. William Simpson	San Jose
Santa Cruz		Santa Cruz
Shasta	Dr. F. Stabel	Redding
Sierra	Dr. R. B. Davy	Downieville
Siskiyou	Dr. F. J. McNulty	Yreka
Solano	Dr. S. G. Bransford	Suisun
Sonoma	Dr. S. S. Bogle	Santa Rosa
Stanislaus	Dr. F. R. De Lappe	Modesto
Sutter	Dr. J. McFadyen	Yuba City
Tehama	Dr. J. S. Cameron	Red Bluff
Trinity	Dr. D. B. Fields	Weaverville
Tulare	Dr. M. E. Pettit	Visalia
Tuolumne	Dr. Wm. Lyman Hood	Sonora
Ventura	Dr. A. A. Maulhardt	Oxnard
Yolo	Dr. W. J. Blevins	Woodland
Yuba	Dr. J. H. Barr	Marysville

*This county has not been able to arrange with any physician to serve as county health officer.

LIST OF CITY HEALTH OFFICERS.

City.	Health Officer.	City.	Health Officer.
Alameda		Hollister	Dr. R. G. Curtis
Albany	Dr. Robt. Hector	Hollywood	E. O. Palmer
Alhambra	Dr. F. E. Corey	Huntington Beach	C. F. Sorenson
Alturas	Dr. John Stile	Huntington Park	Dr. W. Thompson
Alviso		Imperial	Dr. C. E. Standlee
Anaheim	Dr. J. L. Beebe	Inglewood	Dr. H. A. Putnam
Antioch	Dr. W. S. George	Jackson	F. V. Sanguinetti
Arcadia		Kennett	Dr. J. P. Sandholdt
Arcata	Dr. G. W. McKinnon	Kernville	J. W. Sumner
Arroyo Grande		King City	
Auburn	Jas. H. Breslin	Kingsburg	
Azusa	Dr. L. W. Atkinson	Lakeport	Jabez Banks
Bakersfield	S. D. Mullins	Larkspur	
Belvedere	Dr. Florence Scott	Lincoln	F. R. Elder
Benicia	Dr. W. L. McFarland	Lindsay	Dr. W. W. Tourtillot
Berkeley	Dr. J. J. Benton	Livermore	Dr. H. G. McGill
Biggs	Dr. B. Caldwell	Lodi	Dr. F. W. Colman
Bishop	Dr. J. W. Shute	Long Beach	Dr. W. H. Newman
Blue Lake	Dr. G. N. Wood	Lompoc	
Brawley	Dr. L. L. Lindsey	Lordsburg	Dr. J. E. Hubble
Burbank		Los Angeles	Dr. L. M. Powers
Burlingame		Los Banos	Dr. J. L. McClelland
Calistoga		Los Gatos	Dr. C. K. Small
Calexico	Dr. Wm. F. Smith	Loyalton	Dr. G. L. Coates
Chico	G. H. Taylor	Madera	Dr. Mary R. Butin
Chino	Dr. John W. Callnon	Maricopa	Dr. H. N. Taylor
Claremont		Martinez	Dr. E. E. Brown
Cloverdale	F. P. Conner	Marysville	Wm. Meek
Coalinga	Dr. H. S. Warren	Mayfield	Dr. F. M. Seibert
Colfax	Silas Ulery	McCloud	Dr. R. T. Legge
Colton	Dr. J. A. Champion	McKittrick	G. M. Chitwood
Colusa	Dr. C. A. Poage	Merced	Dr. C. H. Castle
Compton	J. W. Stone	Mill Valley	Capt. M. Staples
Concord	Dr. F. F. Neff	Modesto	Dr. J. J. Knowlton
Coram	Geo. H. Thomas	Montague	
Corning	Dr. W. F. Maggard	Mojave	A. Smith
Corona	Dr. W. H. Chapman	Monrovia	Dr. R. D. Adams
Coronado	Dr. Raffaele Lorini	Monterey	Edward Allen
Cottonwood	Dr. A. B. Gilliland	Morgan Hill	Dr. D. W. Watt
Covina		Mountain View	Dr. A. H. McFarlane
Crescent City		Napa	J. D. Treadway
Daly City		National City	Dr. T. F. Johnson
Davis	Dr. W. E. Bates	Nevada City	Hugh Murchie
Delano	Dr. H. Hildreth	Newman	Dr. H. V. Armistead
Dinuba	Dr. Wm. Whittington	Newport Beach	
Dorris	Dr. A. A. Atkinson	Oakdale	Elmer E. Endicott
Dixon	W. C. Rhem	Oakland	Dr. E. N. Ewer
Dunsmuir	Dr. E. J. Cornish	Ocean Side	Dr. R. S. Reid
Eagle Rock	Dr. C. H. Phinney	Ocean Park	Dr. W. M. Kendall
Elsinore	Dr. Hugh Walker	Ontario	Dr. C. S. Orr
Emeryville	Dr. A. T. Drennan	Orange	Dr. F. L. Champline
Escondido	Dr. David Crise	Orland	Dr. S. Goldman
Etna Mills	Dr. W. H. Haines	Oroville	Dr. W. F. Gates
Eureka	Dr. L. A. Wing	Oxnard	Dr. Ralph W. Avery
Exeter	Dr. A. D. McLean	Pacific Grove	E. B. Richi
Fairfield	Dr. S. G. Bransford	Palo Alto	Hubert O. Jenkins
Ferndale	Dr. C. A. Phelan	Pasadena	Dr. Stanley P. Black
Fort Bragg	Dr. L. C. Gregory	Paso Robles	B. B. Pierce
Fort Jones	Thos. Bransom	Perris	A. F. Hardy
Fortuna	Dr. Geo. S. Loveren	Petaluma	Dr. J. M. Proctor
Fowler	Dr. W. T. Crawford	Pinole	J. Chattleton
Fresno	Dr. Geo. H. Aiken	Pittsburg	Dr. F. S. Gregory
Fullerton	Dr. F. J. Gobar	Placerville	P. J. Hall
Gilroy	Dr. John A. Clark	Pleasanton	Dr. S. J. Wells
Glendale	Dr. R. E. Chase	Pomona	Dr. T. J. Wilson
Grass Valley	Paul E. Sears	Porterville	Dr. O. C. Higgins
Gridley	Dr. L. L. Thompson	Piedmont	Geo. T. Burtchael
Hanford	Dr. R. W. Musgrave	Point Arena	
Hayward	Dr. G. E. Reynolds	Potter Valley	
Healdsburg	Dr. J. W. Seawell	Randsburg	E. B. McGinnes
Hemet	Dr. A. B. Eadie	Red Bluff	Dr. G. J. Bailey
Hermosa Beach	E. McCaskey	Redding	L. D. Poole
Hercules	Dr. M. L. Fernandez	Redlands	Dr. H. Forline
Hillsborough		Redondo Beach	Dr. D. R. Hancock

City.	Health Officer.	City.	Health Officer.
Redwood City	Dr. J. L. Ross	Sierra Madre	Dr. R. H. Mackerras
Richmond	Dr. Chas. R. Blake	Sebastopol	Dr. J. J. Keating
Rio Vista	Dr. A. J. McKinnon	Sisson	Dr. G. L. Gougnet
Riverside	Dr. Thos. R. Griffith	South Pasadena	Dr. C. A. Whiting
Rocklin	Dr. S. P. Rugg	South San Francisco	Dr. H. G. Plymire
Roseville	Dr. R. H. Ashby	Stockton	Dr. R. T. McGurk
Ross		Susanville	Dr. E. S. Drucks
Sacramento	Dr. Wm. K. Lindsay	Suisun	
Saint Helena	G. B. Anderson	Stanton	
Salinas	S. A. McCollum	Sonoma	
San Anselmo	Dr. Chipman	Taft	E. G. Wood
San Bernardino	Dr. C. V. McConnico	Tehachapi	R. M. Spencer
San Diego	Dr. F. H. Mead	Tracy	Dr. J. G. Murrell
San Francisco	Dr. R. G. Brodrick	Tehama	
Sanger	Dr. T. F. Madden	Tropico	
San Jose	Dr. M. F. Hopkins	Tulare	Dr. J. B. Rosson
San Jacinto	Thos. Lloyd	Turlock	Dr. E. L. Clough
San Juan	Henry Drake	Ukiah	Dr. J. Liftchild
San Luis Obispo	Dr. P. L. Rookledge	Upland	W. C. Redman
San Rafael	Dr. W. F. Jones	Vacaville	Dr. A. P. Finan
San Mateo	Dr. S. G. Goodspeed	Vallejo	Dr. E. A. Peterson
San Leandro	P. C. Du Bois	Ventura	J. H. Hardey
Santa Ana	Dr. J. I. Clark	Visalia	Dr. M. L. Pettit
Santa Barbara	Dr. D. A. Conrad	Watsonville	Dr. F. H. Koepke
Santa Cruz	Dr. H. E. Piper	Watts	Dr. E. J. Richie
Santa Clara	Dr. J. F. Beattie	Wheatland	Dr. A. W. Foskay
Santa Monica	Dr. W. H. Parker	Whittier	Dr. W. H. Stokes
Santa Paula	Dr. G. E. ApLynne	Willits	Dr. W. L. Blodgett
Santa Rosa	Dr. Jackson Temple	Willows	Thos. Kinkade
Santa Maria	Dr. O. P. Paulding	Winters	Dr. J. H. Haile
Sausalito	Dr. A. H. Mays	Woodland	Peter Scott
Sawtelle	Dr. A. B. Hromadka	Yreka	E. W. Nolan
Selma	Dr. F. H. Williams	Yuba City	

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